FINAL ADMINISTRATIVE DECISION
ILLINOIS PROPERTY TAX APPEAL BOARD

APPELLANT: Equistar Chemicals, LP
DOCKET NO.: 04-00856.001-I-3 through 04-00856.003-I-3
PARCEL NO.: See Below

The parties of record before the Property Tax Appeal Board are Equistar Chemicals, LP, the appellant, by attorney Thomas M. Atherton, of Bose McKinney & Evans LLP in Indianapolis; the Grundy County Board of Review; the Minooka C.H.S.D. #111, and Minooka C.C.S.D. #201, intervenors, by attorney Frederic S. Lane of Robbins Schwartz Nicholas Lifton Taylor in Chicago.

Based on the facts and exhibits presented, the Property Tax Appeal Board hereby finds ***a reduction*** in the assessment of the property as established by the **Grundy** County Board of Review is warranted. The correct assessed valuation of the property is:

DOCKET NO	PARCEL NUMBER	LAND	IMPRVMT	TOTAL
04-00856.001-I-3	03-20-400-001	343,879	3,322,421	$3,666,300
04-00856.002-I-3	03-20-200-011	570,115	40,675,760	$41,245,875
04-00856.003-I-3	03-21-100-003	594,247	46,151,078	$46,745,325

Subject only to the State multiplier as applicable.

ANALYSIS

For purposes of this appeal and pursuant to Property Tax Appeal Board rule 1910.78 (86 Ill.Admin.Code §1910.78), Docket Nos. 04-00856.001-I-3 through 04-00856.003-I-3 were consolidated with Docket Nos. 03-01920.001-I-3 through 03-01920.003-I-3 for purposes of oral hearing. A separate decision will be issued for the 2003 and 2004 assessment years.

The subject property consists of an integrated petro-chemical facility producing four products: ethylene, low density polyethylene (hereinafter "LDPE"), linear density polyethylene (hereinafter "LLDPE") and polypropylene (hereinafter "PP"). The plant was originally constructed in 1969 and is situated on approximately 864.11 acres. The LDPE plant was added in 1971 followed by the addition of an air separation unit in 1975 and a PP unit in 1978. In 1984 LLDPE production began. The ethylene

plant, which has an annual capacity of 1.25 billion pounds, produces feed stock for the other plants. Of the feed stock that is produced, 85% is consumed internally for the production of the other three products. The LDPE plant has an annual capacity of 540 million pounds and contains several high pressure, high temperature reaction vessels along with large disc and cutting facilities. The LLDPE plant, built in 1984 and rebuilt in 1990, has an annual capacity of 650 million pounds and contains a main reactor that introduces the feed stock to a catalyst at low pressure and temperature. The PP plant was built in the mid 1970's with an annual capacity of 280 million pounds and consists of nine reactor towers and support equipment. The water treatment plant consists of an aeration basin, two biological ponds, an equalization pond, an off spec pond, a sludge pond and a settling pond. The utilities plant produces drinking water, boiler feed water and steam for the entire plant. There is also a storage area consisting of seven main storage tanks and an ethylene oxide sphere tank. The plant was rebuilt in 1989/1990 due to two fires. The plant also contains several furnaces and seven fractionation towers. The subject, commonly known as Quantum Chemical Corporation, Morris Plant, is located in Morris, Aux Sable Township, Grundy County.

The appellant, through counsel, appeared before the Property Tax Appeal Board contending overvaluation as the basis of the appeal.[1] In support of this argument the appellant submitted a narrative appraisal prepared by Michael J. Kelly of Real Estate Analysis Corporation (REAC), Chicago, Illinois. Kelly estimated the subject property had a market value of $275,000,000 as of January 1, 2004. Kelly was called as a witness on behalf of the appellant.

Kelly has been employed by REAC for approximately 30 years and has an MAI designation from the Appraisal Institute and a SRPA designation from the Society of Real Property Appraisers. He is also a state licensed appraiser in Illinois, Iowa, Michigan and Indiana. He has a bachelor's degree in business finance from Western Illinois University and an M.B.A. in business from the University of Chicago. He has appraised commercial, office, retail and a variety of industrial properties. Industrial properties include paper mills such as International Paper, liner board mills, a lime production facility, cement plants, power plants and steel mills such as National Steel and U.S. Steel. The industrial plants included machinery and equipment in the going concern value.[2]

Kelly identified Appellant's Exhibit No. 1 as his appraisal of the subject property. The purpose of the appraisal was to estimate the subject's market value as of January 1, 2004.

[1] At hearing the appellant withdrew its legal argument regarding the legality of Grundy County Assessing officials practice and policy of assessing real property as it applies to machinery and equipment. The withdrawal was allowed without objection.

[2] Kelly was tendered and accepted as an expert witness in real estate appraisal without objection.

In describing the improvements, Kelly testified that the subject is a petrochemical plant that produces four basic products. His appraisal includes all of the machinery and equipment as well as the land and buildings. He testified that a majority of the value is in the machinery and equipment versus the buildings and land. The primary product of the subject is ethylene which is then funneled through the plant and used to produce LDPE, LLDPE and PP. The plant was originally constructed in 1969 with several additions over the years. Kelly testified that a fire occurred in 1990 and a certain amount of rebuilding occurred. Because of this, he calculated a weighted age of 21 years that takes into consideration the rebuilding of the plant as of January 1, 2003. Kelly testified that there is a Calpine plant on the subject property identified in the appraisal as parcel number 03-28-100-007. The Calpine's cogeneration improvements are not included in the value estimate in the appraisal. Kelly testified that he did not make any allocation as to what the pollution control items would contribute to the value of the subject property, nor has he taken any value out of the property (Transcript, page 570). Page 11 of Appellant's Exhibit No. 1 depicts the size of each parcel located within the plant.

The witness testified that the chemical industry is one of peaks and valleys where plants such as the subject can make money in one year and then have significant decreases the next year, so it is best to look at the industry at a two or three year period to determine what would be relevant as of the date of value. Kelly testified that industries such as the subject operate on margins from $0.02 to $0.07 cents per pound between what it costs to produce the product and what they can sell it for. Kelly testified that the margin is what drives the industry – the price of raw materials is really what dictates the market price.

Kelly testified that petrochemical plants are income producing plants that have an identifiable income stream; so when the properties are bought and sold, it is based primarily on how much revenue they can produce and how much net income they can generate. Kelly testified that the income approach to value is used to identify stabilized revenues, subtract out expenses, and then capitalized to what the industry rate of return would be for that particular industry. Kelly testified that when valuing a large industrial building without the machinery and equipment included, it's difficult to obtain rental data for properties over a million feet. So typically, the income approach would not be used. However, for the subject, he had a particular product produced within the subject, that is sold and he has an identifiable revenue stream. Plants such as the subject are typically traded on the open market based on their revenue-producing capability. Therefore, the revenue stream definitely has a significant effect on the property's value.

Kelly testified the highest and best use of the subject as vacant was for general industrial, and as improved would be its present use as a petrochemical plant.

One of the approaches to value developed by Kelly was the income approach. Kelly examined the subject's historical operating statements from 1999 through 2003. After examining all four products produced at the subject plant (ethylene, LDPE, LLDPE and PP) he calculated what the average price per pound was for the production cost at the subject property. Kelly examined each product separately because of their differing market prices and demand levels. The primary product, ethylene is funneled into the three finished product lines whereby 80% of the ethylene is consumed. The balance of ethylene is shipped off-site to Tuscola and sold as ethylene.

Kelly's appraisal depicts the first product line (LDPE) had an average industry price in 2003 of approximately $0.51 cents per pound, and at Equistar the average price per pound for LDPE in 2003 was approximately $0.42 cents. Page 109 of Appellant's Exhibit No. 1 depicts LPDE industry prices ranging from $0.405 to $0.513 from 2000 to 2003 with operating rates ranging from 88.2% to 92.9%. The subject is depicted as having LPDE prices from 2000 to 2003 ranging from $0.332 to $0.416 cents per pound and operating rates ranging from 84.6% to 97.0%. Kelly testified that the industry was projecting an increase for 2003 so he increased the utilization rate for LPDE for the subject to 95% under his stabilized revenues for LPDE. Kelly testified that the industry prices on page 109 reflect an average and what the subject actually gets is based on whatever discounts they have to give their customers to sell the products. Kelly determined the industry prices, operating rates and projections using the November 2002 issue of Chemical Data Inc., the January 2003 issue of Chemical Inc. and the January 2004 issue of Chemical Inc. The appraisal depicts a 1% increase in the price of LPDE in 2003, so Kelly calculated a stabilized price of $0.42 cents per pound and a 95% operating rate or stabilized revenue for LPDE for the subject of $215,460,000 (Appellant's Exhibit 1, page 110). Kelly utilized the same method described above for each product line. LLPDE was calculated to have a stabilized price of $0.36 cents per pound and a 70% operating rate which indicated stabilized revenue of $163,800,000. PP was calculated to have a stabilized price of $0.42 cents per pound and an 85% operating rate which indicated stabilized revenue of $99,960,000. For ethylene, Kelly calculated a stabilized price of $0.31 cents per pound and a 90% operating rate indicating stabilized revenue of $62,000,000. Total stabilized revenue for the four product lines was $541,220,000 (Appellant's Exhibit 1, page 117). The next step required calculation of the expense ratios to be applied.

For expense ratios, Kelly examined the historical expense ratios for each product line from 2000 to 2003. Kelly stabilized the expense ratio for each product line close to each product's 3 year expense ratio average. LDPE was stabilized at 86.5%, LLPDE was stabilized at 91.5%, PP was stabilized at 98.9% and ethylene was stabilized at 84.5%. Because ethylene's historical profit margin was based on internal transfer prices to the Tuscola Equistar plant being lower than industry averages, Kelly

substituted the higher industry price for years 2001, 2002 and 2003. This resulted in a profit margin increase for ethylene of 15.6%. Kelly verified the projected expenses by comparing the stabilized profit margins he calculated against industry data. The industry data depicted an 8.96% profit margin and he projected the subject as having a 8.9% profit margin after taxes. He determined the correlation between industry profit margins and his projected profit margins were close. Based on all four product lines, Kelly calculated total gross revenue for the subject of $541,220,000 and subtracted total expense of $487,500,000 to arrive at a stabilized net income of the going concern value for the subject of $53,720,000 before deduction of property taxes (Appellant's Exhibit 1, page 122). Kelly next determined the appropriate capitalization rate to be applied.

To convert the net income of the subject into a capital value, Kelly utilized the band of investment method to derive an overall capitalization rate. To determine the appropriate interest rate on the debt portion of the capital, Kelly looked at the bond ratings of four petrochemical producers, Nova Chemicals, Millennium Chemicals, Lyondell Chemicals and Equistar Chemicals. Lyondell is the major parent company of Equistar, owning 70%, with Millennium owning 29% of Equistar. Each of these companies is publicly traded. The bond ratings for these chemical plants were Ba3 to B1 with yield rates ranging from 5.7% to 8.4%. The bond rate in 2003 for the "Baa" rating was approximately 7%, so Kelly stabilized the bond interest rate at 7%. Kelly estimated a remaining economic life for the subject of 8 years with the amortization period depicting an annual constant of 0.1675. In order to allocate the percentage of debt and equity for the subject, Kelly utilized the normal proportion of debt as compared to equity. For equity he utilized the market value of the stock times the number of outstanding shares to determine what the equity was worth. He then added this amount to the debt to get a total. After examining the portion of debt and equity for three petrochemical plants, Kelly determined a ratio for the subject of 55% for debt and 45% for equity was reasonable. The next step was to determine the appropriate rate of return on equity. Kelly performed his analysis on a pre-tax basis.

Kelly examined Lyondell Chemical, Nova Chemical and Millennium Chemicals from 2000 to 2003. The 4 year before tax average rate of return was as follows: Lyondell 11.7%; Nova Chemical 15.5% and Millennium 8.7% with an average for all three companies depicted at 12%. Kelly testified that the higher equity rates are the result of rate calculations before federal taxes and because machinery and equipment has a shorter life than what an appraiser finds in a real estate investment of a warehouse, which might have a 60 year life. Kelly testified that in this case, there is an income stream that is supporting the return on investment and return of investment for machinery and equipment which has a much shorter life than buildings. Therefore, it requires a higher rate of return in order to recapture the investment in equipment. In addition, there is more risk involved than in a warehouse investment. Further, Kelly testified that the petrochemical

business is more cyclical in nature than warehouse investments. Kelly used 12% as the rate of return for equity on a before-tax basis. Page 131 of his appraisal summarizes Kelly's analysis which depicts an overall capitalization rate, using the band of investment method, for the subject of 14.5%, rounded. Kelly then added an effective tax rate of 2.1% to derive an overall capitalization rate of 16.6% which was divided into the stabilized net income of $49,570,000 to arrive at an indicated value of the subject as a going concern for real estate, personal property, working capital and business value of $325,000,000, rounded. The next step was to separate out the working capital.

To determine working capital, Kelly analyzed all 15 plants of the Equistar system for 2001, 2002 and 2003. He calculated the total assets and liabilities for each year to derive a net working capital for each year. He then allocated the subject's share for the Morris facility of 7.3% based on the subject's proportionate share of the 2003 total revenues of $6.545 billion for the entire Equistar system or $33,000,000 for the subject (Morris Plant). Kelly verified the subject's estimated net working capital by comparing his calculations with published data for each product line found in Chemical Data, Inc. This industry publication indicated a working capital of $61.3 million for all of the product lines produced by the subject using the subject's production capacities. This was higher than what he developed using actual Equistar system amounts, so he ultimately relied on the actual amount used at Equistar ($33,000,000). Kelly explained that the subject's working capital may be lower because most of its ethylene line is absorbed and used internally for the other three product lines the company produces and is not sold to outside customers. Kelly next discussed his analysis of the subject's business value.

Kelly testified that the intangible portion of value for any going concern is the goodwill or business value.[3] This business value is generated from the reputation of the business, its expertise, the value of the work force, et cetera, and is the amount generated over and above what the required returns would be for the working capital and the machinery and equipment. Kelly utilized the subject's stabilized net income of $53,720,000 and applied a capitalization rate of 25% to arrive at a value of the subject's going concern of $325,000,000, rounded. Kelly developed the subject's business value by allocating the working capital of the subject in proportion to the proportionate share of 2003 revenues attributed to the entire Equistar system which resulted in a working capital deduction of $33,000,000. Kelly next allocated and deducted the proportion of net income attributable to each class of assets and concluded a value of goodwill for the subject of $44,600,000. Kelly then deducted the working capital ($33,000,000) and goodwill ($44,600,000) from the subject's going concern value ($325,000,000) to arrive at a value

[3] The terms "goodwill" and "business value" are used interchangeably.

of all real estate and tangible property of $250,000,000, rounded.[4]

Kelly next developed the sales comparison approach to value. Kelly testified that the sales comparison approach will tell the appraiser what similar types of production facilities are selling for in terms of price per pound in the case of the subject and then also in terms of what multiple of revenue the plants are selling at, and then that multiplier could be applied to the revenue that's projected for the subject plant. Kelly examined one sale. Kelly testified that he would prefer to have more than one sale, however, this one sale gives an indication of what the market is selling at in terms of price per pound and a revenue multiplier that can be applied to whatever the revenue is at the subject plant. Kelly testified that the revenue multiplier is coming from a combination of many plants, but is a multiplier that is coming from the same industry and reflects the risk and expense ratio of that particular industry.

The sale, as described on page 140 of Kelly's appraisal, is part of the Equistar system. The sale from Occidental Petroleum Corporation, which owned approximately 30% interest in Equistar, sold Equistar L.P. to Lyondell Chemical, which now owns approximately 70% of Equistar L.P. The sale occurred in August 2002 and was described by Kelly as a partial interest sale. Because only a partial interest transferred, it required proration to give a meaningful indicator of what the adjusted price would be for the whole Equistar system. From this Kelly testified he could derive a price per pound and also a gross income multiplier. Equistar L.P., the property that sold, was described as being located in Texas, Illinois, Iowa, Ohio, New Jersey and Louisiana. These properties sold for a total of $452,000,000 for a 29.5% interest. Prorating this amount up and adjusting for a minority ownership discount of 5% ($76.6 million) and long term debt and other liabilities of Equistar L.P. ($2,410 million) indicated an adjusted sale price of $4,018,800,000 for a 100% interest.

Kelly's appraisal depicts the entire Equistar system as containing approximately 17.8 billion pounds of capacity among all of its plants. Kelly then divided the $4,018,800,000 adjusted sale price by the annual finished capacity of 17.8 billion pounds to arrive at a price of $0.226 per pound of finished capacity, which included working capital and goodwill. The appraisal also depicts the total adjusted sales price including off-site assets such as pipeline, storage tanks and barge facilities. Kelly testified that because the adjusted sale price includes off-site assets, the total adjusted sale price represents the upper limit of value. Kelly then developed a gross income multiplier by taking the adjusted sales price of $4,018,800,000 and dividing it by the subject property's 2003 gross income of $480,434,000 to arrive at a gross income

[4] The term "personal property" described machinery and equipment (Transcript page 64).

multiplier of 0.70. This gross income multiplier represents a direct indicator or value of what something sold for compared to what the gross revenue was, and can be applied to the subject, taking into account the differences and expense ratio.

Kelly then applied $0.22 cents per pound to the subject's finished capacity which indicated a value of $367,400,000, including land. Kelly then subtracted working capital of $33,000,000 and goodwill of $44,600 to arrive at a value of real estate and process machinery and equipment of $289,800,000 or $290,000,000, rounded.

Kelly next examined the subject's value using the gross income multiplier developed earlier. In his analysis of the subject's value using the gross income multiplier, Kelly examined the Equistar system's entire revenue for 2003, which he got from his income capitalization approach. After examination of the sale transaction, Kelly determined a gross sale multiplier of 70% was appropriate for 2004. Kelly then multiplied the subject's gross income from 2003 ($480,434,000) by 0.70 to arrive at a going concern value of $336,303,800. From this Kelly deducted working capital of $33,000,000 and goodwill of $44,600,000 to arrive at an indicated value for the subject real estate, machinery and equipment of $260,000,000, rounded.

In reconciling the price per pound of annual finished capacity and gross income multiplier analyses, Kelly testified that he weighed both analyses equally and reconciled the two values at $280,000,000 which he concluded was the subject's January 1, 2004 value as indicated by the sales comparison approach.

Kelly testified that it was appropriate to rely on the single sale he examined because it was time relevant having occurred in 2002, and more importantly, included the subject plant. Further, all of the plants involved were petrochemical plants. Kelly testified that the days of single plant sales are gone because there has been so much consolidation in the petrochemical industry that these plants tend to be controlled by much larger companies than they were in the 1980's and early 1990's.

Kelly also developed a cost approach to value. The initial step under the cost approach was to estimate the site value using nine vacant land sales. The land comparables were located in the Grundy and Will County areas. The nine land comparables ranged from 2.8 acres to 160.90 acres. The sales occurred from September 1998 to May 2002 for prices ranging from $80,000 to $2,230,000 or from $3,200 to $28,571 per acre. The land sale comparables were adjusted for date of sale, size, zoning and overall similarity. Kelly testified that the land sales were confirmed by examination of the deed or transfer declaration sheet on each land sale in addition to confirmation with the buyer, seller or a principal involved in the transaction. Based on this data the appraiser estimated the subject site had a value of $8,000 per acre for a total value of $6,915,000, rounded.

The second step under the cost approach was to estimate the replacement cost new of the improvements. In estimating the cost new, Kelly used three methods: historical cost trending, engineering estimates trended forward and Chemical Data, Inc. information.

For the historical cost trending analysis, Kelly examined the capital expenditures made at the plant from its inception and trended those forward to what the trended cost would be as of January 1, 2004 using the Marshall cost book that publishes trending factors for the chemical industry. The source for the historical cost came from company records. Kelly's appraisal (page 87) depicts the trending of all historical costs at the subject which indicated a cost new of $875,000,000, rounded, with a weighted average age of 22 years. Kelly testified that a weighted average age was used because over different points in time different capital infusions for machinery and equipment were applied.

The next method used by Kelly involved engineering estimates that he trended forward. Kelly testified that appraisals of the subject were completed in 1992 and in 1993. The firm of Wright Killen Company performed an analysis in developing a reproduction cost new of the entire plant. Wright Killen specializes in petrochemical industry analyses and engineering work. Kelly spoke with Pete Killen of Wright Killen regarding the subject. In 1992, Wright Killen estimated what the replacement cost of the subject would be and also what functional operating penalties would be. Kelly used Wright Killen's cost for the subject's 1992 capacity and trended it up to 2004. Kelly then multiplied that amount by whatever the 2004 capacity is for that particular product line. The trending factor used by Kelly was 1.182 for all product lines.[5] As an example, Kelly testified that the data depicts ethylene had a capacity of 1 billion pounds per year with a capital cost of $220,000,000 at $0.22 cents per pound in 1992. After trending the per pound cost by a factor of 1.182, the 2004 trended cost would be $0.26 per pound which was multiplied by the subject's 2004 ethylene capacity of 1,250,000,000 indicating a 2004 value of ethylene of $325,000,000. This was done for each product line which indicated a 2004 cost of all product lines of $827,300,000, after including estimated capitalized interest incurred during construction of $107,000,000.

Kelly testified that Wright Killen's replacement cost estimate for the off-site portion of the subject was adjusted down by approximately 50% from a stand-alone total due to the synergies involved with the sharing of off-sites such as steam generation, waste treatment, etc. Kelly testified this adjustment was required because a plant typical of the subject would not have separate support facilities for each product line; some of the

[5] REAC's 2004 appraisal (Appellant's Exhibit No. 1, page 88), incorrectly states a trending factor of 1.16 for three product lines; however, the witness corrected the trending factor during direct examination.

support features such as steam and waste treatment would be shared and commonly used by the other product lines. Kelly next examined industry published estimates of cost new based on a per pound basis.

Kelly utilized Chemical Data, Inc., a 2002 publication, to examine industry estimates of cost new. Kelly's appraisal depicts a cost new of each product line which is broken down into a capital cost per pound of capacity. The cost per pound is then multiplied by the subject's annual capacity for each product to arrive at an estimated cost of $904,400,000.

Kelly next reconciled all three cost methods giving less weight to the historical cost method because of the older installation costs. Based on the three methods and analysis, Kelly estimated a replacement cost new of the subject improvements of $870,000,000.

The next step was to estimate the depreciation associated with the improvements. Kelly estimated a weighted average age for the subject of 22 years, which he testified was appropriate considering the subject was opened in 1970, the various dates money was infused back into the subject and the fact that there was a rebuild in 1990 due to a fire. Kelly testified that Wright Killen had originally estimated the subject had a typical life of approximately 30 years for the production units, 20 years for the waste treatment and 60 years for the building. Kelly testified that 80% of the replacement cost for the subject is spent on machinery and equipment which has an estimated life of approximately 30 years. After weighing out the waste treatment, general purpose facilities and the buildings, Kelly arrived at an average weighted age by cost contribution of 30 years. Kelly testified that machinery and equipment really determines the typical life for the subject. Kelly testified that Wright Killen made that estimate back in 1993. Kelly telephoned Wright Killen to see if their opinion of economic life would be any different in 2003. Kelly was told by Pete Killen that it would not be different. Kelly also examined Marshall for chemicals and plastics to verify this. Marshall indicated a lower value in the 8 to 11 year range. In addition, Kelly examined an actual shut-down of an ethyl oxide unit at the subject that ended up having a life of approximately 22 years. After conversations with Pete Killen, looking at Marshall and examining actual failures at the plant, Kelly determined the subject had 30 years of economic life. Using the weighted effective physical age of 22 years, Kelly divided this by the estimated total economic life of 30 years to calculate physical depreciation of 73%. The replacement cost new of $870,000,000 was multiplied by the 73% depreciation to arrive at physical depreciation of $635,100,000.

Kelly next examined whether functional obsolescence existed. To determine functional obsolescence Kelly examined the ethylene unit's production costs which indicated they were $0.02 cents per pound higher than what was found in a newer plant. He also examined the previous Wright Killen study which identified

functional obsolescence based on the ethylene plant being older and having higher energy usage when compared to a newer plant. Kelly opined that the subject experienced $0.02 cents per pound in excess operating costs in the ethylene plant. Kelly multiplied the $0.02 cents per pound by the annual stabilized ethylene production of 1.125 million pounds to arrive at an annual operating penalty of $22.5 million. This amount was converted to a present value by multiplying it times the present worth factor based on 8 years of remaining life and a 9.2% weighted discount rate, for a present worth value factor of 5.49. The $22.5 million, described as a penalty, was multiplied by the present worth value factor of 5.49 to arrive at $123,525,000. This amount was debased for physical depreciation of 73% ($90,173,250) to arrive at a net functional obsolescence of $33,350,000, rounded.

Kelly next examined whether external obsolescence existed. For Kelly's external obsolescence analysis, he started with the replacement cost new of improvements amount of $870,000,000 from which physical depreciation of $635,100,000 and functional obsolescence of $33,350,000 were deducted to arrive at a depreciated value of $201,550,000. Kelly then multiplied this depreciated value by the capitalization rate of 16.6%, which was used in the income approach, to arrive at required earnings of $33,457,000. Kelly explained that if the stabilized earnings were less than the required earnings of $33 million, it would indicate additional external obsolescence. Kelly compared the required earnings of $33,457,000 to the stabilized earnings of $52,060,000 from the income approach and determined external obsolescence was not present.

A summary of the cost approach depicts a total replacement cost new of $870,000,000 less physical depreciation of $635,100,000 and functional obsolescence of $33,350,000 to arrive at a depreciated value of the improvements of $201,550. A land value of $6,915,000 was added to arrive at an estimate of value for the real estate and processing machinery and equipment using the cost approach of $208,465,000 or $210,000,000, rounded.

In reconciling his appraisal, Kelly testified that his cost approach indicated a value of $210,000,000, his income approach depicted a value of $250,000,000 and his sales comparison approach indicated a value of $280,000,000. Kelly gave consideration to the type and extent of data available for each approach and considered each approach in his final opinion of value. Kelly testified that he had good data for the estimate of replacement cost new using three different sources; however, the subject is an older plant and required a significant amount of depreciation which weakens the reliability of the cost approach. Under the sales comparison approach, Kelly admitted its weakness was using only one comparable transaction. Kelly testified that the strength of the sale is that it was in the same industry and included the subject property to the extent it contributed to the value of the Equistar Group, and gave some indicators of what the

appropriate gross income multipliers would be for the petrochemical industry at that time.

Kelly further testified that the weakness in the income approach were the estimates of revenue and expenses. In addition, a weakness was the inclusion of a certain amount of business value because income is projected for a going concern which required an adjustment at the end for elements such as working capital and business value that were included in the income approach. Kelly testified that a strength of the income approach was that it included the reason the plant was built, to generate revenue from sales of their products and generate a net income. Kelly testified that if the property were sold, a buyer would certainly look at the revenue and expenses and the plant's capacity to produce income in the future. Kelly reconciled a final opinion of value for the subject of $275,000,000 as of January 1, 2004 (Appellant's Exhibit No. 1).

Kelly testified that there was a slight difference in land values from 2003 to 2004. In 2004, the land value was higher at $8,000 per acre or $6,915,000 (Appellant's Exhibit No. 1). Kelly testified that the difference was due to appreciation of land values in 2004. Kelly next testified that his methods for estimating cost and depreciation for 2003 and 2004 were the same. His estimate of value for the subject in 2003 using the cost approach was $225,000,000.

For his 2004 income analysis, Kelly again used the same methodology as described earlier with slightly different conclusions as far as revenues, expenses and capitalization rates. Kelly concluded a 2004 value for the subject using the income approach of $250,000,000.

Using the same data previously described, Kelly estimated a 2004 value for the subject using the sales comparison approach of $280,000,000. This amount was less than the 2003 estimate of value using the sales comparison approach because the expense ratio for the subject was lower in 2003 so Kelly used a slightly higher gross income multiplier than he did in his 2004 estimate of value. Kelly testified that as the expense ratio goes up the gross income multiplier will decrease because the income stream is less valuable and vice-versa.

For 2004, Kelly estimated a final value conclusion for the subject of $275,000,000. Based on this evidence, the appellant requested the subject's assessment be reduced commensurate with Kelly's final opinion of value estimate for 2004.

During cross-examination, Kelly admitted he did not hold any special designations with regard to the valuation of heavy industrial machinery and equipment, however, machinery and equipment was considered as a part of a going concern in his industrial training courses. Kelly acknowledged that most of the value in the subject property was in the machinery and equipment.

Kelly testified that he probably gave less weight to the cost approach and more weight to the income and sales approaches to value. In regards to the cost approach, Kelly gave less weight to method 1, reproduction of trended historical costs, than he did for the other two methods which included the Wright Killen study and industry publications. Kelly testified that it was customary for an experienced appraiser to use trended historical cost, Greenfield cost and engineering estimates to value machinery and equipment in the petrochemical industry. Kelly did not recall if Wright Killen was given an asset list. Kelly relied upon what Wright Killen did in 1991 and 1993 for an estimate of Greenfield cost and certain operating penalties and economic lives. Kelly used Wright Killen on a Greenfield basis, but not to trend the cost of machinery and equipment. Kelly admitted that the reliability of trending gets weaker as the equipment trended gets older. Kelly testified that the Wright Killen costs were not trended in 1991; however they were trended for a 1993 appraisal. Kelly did not have Wright Killen re-estimate equipment cost in 2003 because Kelly felt he had a significant amount of data as well as current estimates from Chemical Data, Inc. Kelly felt that three sources were sufficient to base his opinion of value of cost for the subject in 2003. Kelly testified that he had an asset list, however, it was not included in the appraisal. The asset list described the year of installation of each piece of equipment, what each piece of equipment was and its cost.

Kelly acknowledged that the ethylene industry had modest growth in capacity over the last ten years. In 2002 Equistar's operating rate of 88.7% was 5.5% higher than the industry operating rate of 83.2%. Kelly admitted that the 2002 gross sales figure of $406,000,000 was not adjusted for the difference in transfer price and market price for unused ethylene sold to the Tuscola plant. Kelly admitted that the 2002 gross sales would have been slightly higher if market prices were used in his analysis. Kelly further testified that when he computed revenue in his analysis he used projected marketplace prices to get a stabilized price per unit and compared that to the average price per unit to determine what the percentage of increase would be, and then applied that percentage increase to the Equistar's price for each product line. The witness was questioned extensively on his different methodologies used in 1991 and 1992 to value the subject and his methodologies used in 2003 and 2004. Kelly admitted that if the subject Morris plant was receiving land rents for the Calpine power plant he did not include that in his appraisal report. Kelly testified that the Calpine plant was excluded in the estimate of value for the subject.

The witness was next questioned on the different methodologies used in 2006 to estimate a value for Aux Sable, a natural gas extraction and fractionation plant also located in Grundy County. Intervenor's counsel argued that the witness' credibility was diminished because he used different methodologies to value Aux Sable than he did for the subject, even though they were

substantially similar in that both properties primarily consisted of machinery processing equipment.

During cross-examination, Kelly testified that the minority discount that was referred to in the sales comparison approach to value generally means that a seller gets less money for his or her interest than the percentage that the seller owns of the company. Kelly testified that this can occur when less than 100% of the company is sold. Kelly estimated a 5% minority discount for the sales transaction between Occidental Petroleum and Lyondell. Kelly testified that Occidental Petroleum had a 29% interest and Lyondell had approximately a 40% interest with a third party owning the remaining 31%. Lyondell, which had control of the company with its 40% interest, was buying-out Occidental Petroleum. Kelly could not recall if Occidental Petroleum marketed their ownership interest on the open market.

Under the cost approach to value, Kelly reiterated that he used three different approaches to estimate the cost of the machinery equipment and other improvements at the subject plant. These approaches were identified as 1) Trended Historical Cost, 2) Engineering Estimate from Wright Killen, and 3) Industry Publication Costs. Kelly testified that in order to trend the historical cost, he developed a trend factor by comparing the Marshall Valuation Price Level for any given year to the 2003 Marshall price list, as shown on page 87 of the 2004 appraisal. Kelly testified that for the 2003 appraisal, he used the Marshall 2002 price list as a base and for the 2004 appraisal he used the 2003 Marshall price list. Kelly testified that the previous calendar year for each respective appraisal was used because that is when the expenditures were actually made. Kelly acknowledged that had he used the current year as a basis for each respective appraisal, it would have made a slight difference in value. However, Kelly opined that the difference was minimal at best and was accounted for because he rounded the estimated value for the machinery and equipment amount up to $875,000,000. Kelly was next questioned extensively on the historical cost trending approach in which typographical errors were discovered. Kelly testified that he gave more weight in his analysis to the Greenfield Capital Cost approach than he did to the trended historical cost. Kelly testified that he did not use Marshall Valuation tables to determine depreciation. Rather, he used an age/life method. Kelly used an effective age of 21 for the entire plant (building, machinery and equipment) in the 2003 appraisal and an effective age of 22 for the entire plant (building, machinery and equipment) in the 2004 appraisal.

Kelly was next questioned regarding functional obsolescence. Kelly opined that the subject incurred functional obsolescence because of the operating penalties at the ethylene plant caused by outdated and inefficient facilities. Kelly testified that he found an excess cost of production was incurred by operating the existing plant versus the cost of operating a modern facility. Kelly acknowledged that he deducted $22,500,000 for functional obsolescence for both 2003 and 2004 as an operating penalty due

to excess costs of production. Kelly testified that this penalty was based on a stabilized production of 1,825,000,000 pounds of ethylene production which included all of the production of ethylene at the plant, including the amounts used for feed stock for the other product lines at the Morris plant and the amount used at Equistar's Tuscola plant. Kelly acknowledged that the 1,125,000,000 pounds of ethylene that was produced and sold at a stabilized price of $0.29 per pound at a 19% stabilized profit margin equals a profit to the seller of $57,712,000. Kelly testified that Equistar makes its own feed stock (ethylene), rather than buying it on the open market, however, their cost to make that feed stock is higher than the cost to make ethylene is on the open market. Kelly determined that the functional obsolescence was incurable because it would cost more than $22.5 million to redo the entire ethylene line to cure a $22,500,000 operating penalty.

Kelly admitted that he did not do his land valuations in 2003 and 2004 the same way he did them in 1991 and 1993. In 1991 and 1993, he valued the subject's land in two parts, land required for manufacturing and the second being excess land. Kelly admitted that only two of his land sales were industrial zoned properties larger than five acres. Land sale comparables #5 and #8 sold for $26,335 and $13,393 per acre. Kelly acknowledged that he estimated a value for the subject's land at $7,500 per acre in the 2003 appraisal. In the 2004 appraisal, Kelly added an additional 21.05 acre land sale that was zoned industrial which sold for $13,536 per acre. In the 2004 appraisal, Kelly estimated a land value for the subject of $8,000 per acre.

During re-direct, Kelly testified that Equistar has to discount their selling price to be competitive in the market place. Kelly testified that Chem. Data depicts the stated industry average and the Equistar figure is the actual price with the difference reflecting whatever discounts they have to give their customers.

Kelly next discussed his one sale used in his sales analysis. Kelly testified that normally if he were doing a warehouse without machinery and equipment, he would have more sales. However, because of consolidation in the petrochemical industry, it's rare to find any single plant locations or sales of just one or two plants. Kelly testified that the industry has trended towards consolidation. Kelly felt that the one sale that was used was important because it involved the subject property.

Kelly's appraisal depicts that a 25% capitalization rate was used to quantify the subject's business value of $44,600,000 (Appellant's Exhibit No. 1). In the 2004 appraisal he used a 14.5% capitalization rate taken from his band of investment technique and added an effective tax rate of 2.1% which indicated a value of the subject as a going concern, including real estate, personal property, working capital and business value for a total of $325,000,000, rounded (Appellant's Exhibit No. 1, page 132). Kelly testified that the most risky part of the income stream for any going concern is the increment of income that can be

generated over and above the required return on the tangible assets. In this case, most of the income goes to the return on the tangible assets, but the income would accrue to the business value. Because that is the riskiest part, and the part that can evaporate first, conceptually that would get a higher rate. Kelly admitted that he did not have any sales to give him a specific rate; however, he testified that the rate is higher. He found in the literature that the capitalization rate is higher because it's riskier on the going concern portion or the business income, so he did his best to estimate what would be worth an additional 10 points in terms of risk. Kelly testified that he tried to verify whether the 25% capitalization rate was correct, however, he could not find any transactions involving a business without any attached assets to identify the capitalization rate just for the business portion. Kelly testified that everyone accepts that it is higher, but finding proof is virtually impossible. Kelly testified that if he had capitalized the goodwill at 16.6% as opposed to the 25%, the amount of value for goodwill would go up and increase to $6,000,000. This would necessarily increase the value of intangible assets and become a greater deduction off of the sales approach to value. In effect, it would decrease the value of the underlying tangible real estate.

Kelly next testified regarding the Calpine Plant, a cogeneration electrical facility which is located in the middle of the plant on parcel 03-20-200-007. When questioned whether the Calpine Plant added community value to the subject, Kelly testified that to the extent the electrical rate would be cheaper than the market rate, he does not believe there is much of a difference. Kelly testified that Equistar gets some of their power from the Calpine Plant, however, he could not calculate if it added to the subject's value. Kelly testified that Equistar owns the land underneath the Calpine Plant; however, he would not have investigated it at the time of preparing his appraisal because the Calpine Plant is assessed to a different parcel. On page 17 of the 2003 appraisal, Kelly testified that this page explains there are pollution control assessments on the property. Kelly testified that he did not make any allocation as to what the pollution control items would contribute to the value of the subject, nor has he taken any value out of it. Page 17 depicts the assessed values for the pollution control items for the subject as assessed by the Illinois Department of Revenue. Kelly verified these amounts from the tax bills. Kelly testified that he did not take any value off for the pollution control items. Page 17 depicts an assessed value of $55,533 for wastewater facilities and air pollution control.

Kelly was next questioned regarding the stabilized operating rates used in his 2003 appraisal (page 110, Appellant Exhibit No. 2). Page 110 depicts the capacity of the subject's LLDPE line is 650 million pounds. Kelly's appraisal depicts that the projected increase for the industry for ethylene was approximately 15%. Kelly then applied that to what the actual price was for Equistar, which reflects whatever discount they have to give

their customers to sell products. Kelly then increased the Equistar price up based on the projected increase for the entire market at 19% to derive a stabilized price. Kelly testified that Equistar is operating at less than the industry rate. Kelly testified that he used expense ratios to estimate operating costs because they are more predictable than trying to predict an absolute dollar amount because of the increase in costs and pricing in the industry. Kelly testified that the ratios show a more stable pattern over time than trying to predict actual dollar amounts in terms of cents per pound.

Kelly testified that he used a slightly different method to estimate manufacturing costs in his income analysis in 2003 and 2004 than he used in his 1991 and 1993 appraisals. For the 2003 and 2004 appraisals, he examined costs, but used a percentage amount based on profit margin instead of a cost per pound, or total cost. Kelly testified that he did this because the market appeared more erratic, and after studying the data it showed a much clearer pattern by using an expense ratio rather than trying to project a cost per pound. In regards to the ethylene line, Kelly testified that for ethylene sold to Equistar's related company in Tuscola, he examined the national average and not the subject's actual revenue because it was a transfer price that was derived from other products sold on the open market, so he raised the price. Based on this evidence, the appellant requested a reduction in the subject's 2003 and 2004 assessments commensurate with the 2003 and 2004 appraisals, respectively.

The board of review submitted its "Board of Review Notes on Appeal" wherein its final assessments values for the subject parcels under appeal as follows:

P.I.N.	Land	Improvements	Total
03-20-200-011	265,400	53,550,370	$53,815,770
03-20-400-001	160,000	4,409,100	$4,569,100
03-21-100-003	277,020	60,558,720	$60,835,740

For 2004 the subject parcels under appeal had a total assessment of $119,220,610, which reflects a market value of approximately $357,697,600 for 2004 using the three year median level of assessments for Grundy County of 33.33%.[6] The board of review did not present a case in chief, but deferred to the intervenor.

The intervenors, Minooka Community School District No. 201 and Minooka Community High School District No. 111, called John Connolly as their first witness. Connolly is an Executive Vice President with Nationwide Consulting Company (hereinafter

[6] The Grundy County Board of Review failed to submit any evidence in support of its 2003 assessment and was defaulted as a party by letter dated May 2, 2007 in Docket No. 03-01920.001-I-3 through 03-01920.003-I-3. The Grundy County Board of Review did not participate in the proceedings or offer any evidence in support of the board of review's final assessment for 2003.

"Nationwide"). Nationwide is a consulting company that does appraisals, real estate consulting, personal property compliance work, sales and use tax reverse orders. Connolly testified that he also has a brokerage arm for heavy industrial facilities specializing in the petroleum industry. Nationwide has been in the consulting business for approximately 33 years and employs approximately 60 people. Connolly has worked for Nationwide for 33 years and is personally involved in the appraisal and brokerage business. The brokerage division handles various petroleum type facilities and bulk storage facilities that they market and advise on for sale. Nationwide has marketed some refineries. They have also put together a group of convenience stores of up to 150 stores, packaged them and marketed them. They have represented both buyers and sellers. In the brokerage division, Connolly meets with clients and advises them as to the value and marketability. Connolly has been personally involved in the sale of a chemical industrial property. Clients for the brokerage arm of Nationwide have included Exxon Mobil, Sun, Valero, several rail companies, smaller oil companies and heating oil companies. Nationwide does appraisals for bankruptcies, mergers, acquisitions, financing, allocation of purchase price and property taxes. Connolly is a partner in the appraisal division in charge of special assignments. Special assignments entail large, complex assignments, mostly industrial. Connolly testified that the special assignments include the valuation of machinery and equipment. Connolly has been an appraiser since 1972. Connolly has appraised numerous refineries, chemical plants, food processing facilities, plants that make 737 and 747 airplanes, major steel plants in the United States, major aluminum production facilities in the United States and Australia, several overseas facilities, chemical facilities in Germany, Spain and Japan. Connolly testified that these appraisals typically involve the valuation of machinery and equipment. Connolly testified that 80% to 90% of his work has included heavy industrial property with machinery and equipment. Connolly testified that he has appraised seven or eight chemical plants, which included the land, buildings and manufacturing machinery and equipment.

Connolly is a Senior Member of the American Society of Appraisers, designated in machinery and technical specialties as well as real estate. Connolly testified that this designation certifies him to do machinery and equipment appraisals. He has also held almost every position with the American Society of Appraisers, from the local chapter offices to the regional governor, chairman of the machinery and technical specialties committee, co-chair and editor of the machinery and equipment newsletter, treasurer of the international society, first vice president of the international society, vice president, international president along with being chair of numerous committees on the international level. Connolly testified that he was also on the International Valuation Standards Board, which sets up the valuation standards on an international basis for appraising real and personal property, real estate, machinery and equipment and business valuations. Connolly also worked on

developing the Uniform Standards of Professional Appraisal Practice. In a ten year period he has reviewed at least 300 to 400 appraisals for the machinery and technical specialties designation for completeness, methodology, logical conclusion and proper technique to arrive at the value.

Connolly is also a certified member of the Institute of Professionals in Taxation, a certified senior instructor for the American Society of Appraisers, has taught course work and given lectures on the appraisal of heavy industrial processing plants and equipment. Connolly has co-authored three books on the appraisal of machinery and equipment.[7] Connolly is not a member of the Appraisal Institute because he has a designation for the American Society of Appraisers in real estate and machinery and equipment. In addition, Connolly testified that Nationwide had two members in the Appraisal Institute in his office. Connolly has taken every one of the courses offered by the Appraisal Institute required for him to have the MAI designation; however, he has not completed the demonstration appraisal. Connolly testified that the Appraisal Institute does not offer courses in the appraisal of processing machinery and equipment. Connolly is not a licensed real estate appraiser in the State of Illinois.

Connolly testified that the first step, besides the internal processing step, in appraising industrial property with machinery and equipment is to contact the client and send the client a listing of what information is required to do the appraisal. The required information would include an asset list which is important to show what is at the facility, the age of the facility, the amount of items to be examined, and to gather a general feeling regarding the complexity of the project. Connolly would normally require the asset list a week prior to inspection and is considered the foundation of what he is trying to do. When Connolly arrives at the plant, he goes through the asset list with engineers and/or accountants to make sure there is no double counting of assets. Connolly testified that he would also require a plot plan showing the footprint of the machinery and equipment and the buildings, a description of the process at the facility, a process flow diagram and maintenance records. Connolly testified that the plot plan is important to see how the equipment is laid out.

Connolly further would ask for maintenance records for each major operating unit. The records should include the dollars expended in total for the year for both inside maintenance, labor and material, and outside maintenance, labor and material, along with total dollars for the year on each of the major operation lines for the last five years. Connolly also inquires as to any deferred maintenance. This information gives him a feel for the age of the equipment. If he sees equipment maintenance rising 20% to 30% every year, it may indicate that the equipment is nearing the end of its remaining economic life. Connolly

[7] Connolly was tendered as an expert professional appraiser of real estate and heavy industrial process machinery and equipment without objection.

testified that he also requests a capital plan for the next five years to show which product lines are going to be replaced and why they are being replaced.

Connolly also would request financial information for a specific plant to make comparisons with other similar facilities within the company and with the industry in general. After receiving the required information, Connolly would analyze it prior to inspection of the property. During the field inspection, Connolly would typically meet with the plant manager for two to three hours for a large facility such as the subject. He would then do a general tour of the facility for three to four hours to see how everything fits together. Connolly testified that his office would also interview persons at the facility such as accounting persons regarding the asset listing, capitalization procedures, retirement procedures, and a retirement list for as far back as possible in order to formulate a useful life study. Connolly testified that a useful life study is based on a particular plant's experience in retirement of its assets. Connolly testified that this process is necessary to analyze physical life and physical depreciation from all causes. A piece of equipment may be functionally obsolete or economically obsolete because of the high cost of production. This analysis allows Connolly a check and balance against any guide he might use while preparing his appraisal. Connolly testified that it is not possible to do his useful life study with just an asset listing and without interviewing the accounting department.

Connolly testified that his office would also interview the production people to get an idea of where they see sales coming from in the future, what their projections are over the next couple of years and get an indication of where the facility is going. In addition, production will be able to tell if there is any bottlenecking in the process flow and/or any deferred maintenance that might be looming.

In meeting with the maintenance personnel, Connolly analyzes the preventative maintenance program. Connolly opined that if the maintenance program is on an as-needed basis, then that means additional wear and tear on the equipment and assets. Connolly testified that this would depict the physical condition of the assets and indicates if deferred maintenance was present. Connolly testified that for a facility of the subject's size, his office would be at the plant for about one week.

Connolly testified that the appraisal methodologies used in appraising land and buildings of heavy industrial property differ from the methodologies used when appraising the industrial property and the processing machinery and equipment. In appraising heavy industrial, an appraiser would typically consider the three approaches to value, cost, income and market and utilize all three. Connolly testified that when processing machinery and equipment is involved, it requires additional research into an analysis of the process flow, machinery and equipment, operating statistics, et cetera.

Connolly acknowledged that this was the first time, in preparing his appraisal of Equistar, that he did not have the opportunity to discuss the subject in detail or gather detailed information. Connolly testified that he was told by a representative of the appellant that his attorney [Connolly's] had all the information that he was going to get. Connolly admitted to speaking with someone in Equistar's accounting department for approximately one-half hour, and he was taken on a two to three hour tour of the facility and provided with a plot plan, however, he was not allowed to ask questions. During the tour, Connolly testified that he was able to get a general feeling of the layout of the equipment; a general feeling of what major pieces of equipment were there and was able to analyze the condition of the equipment in general. Connolly testified that he received a letter from an assistant controller at Equistar indicating that certain information in the REAC appraisal of 2003 was accurate according to the books and records of the company. Connolly further testified that the lack of information and limits on what he could get restricted his preparation of the appraisal because he had to rely on information that he was told was accurate. Connolly was not able to get all the information that he would typically get in an appraisal assignment.[8] However, based on the information he obtained and based on the verification that the information provided to him was correct, Connolly testified that he did have a reasonable estimate of the subject's market value.

Connolly testified that he performed a review (Intervenors' Exhibit O) of the 2003 REAC appraisal (Appellant's Exhibit No. 2). Connolly testified that he reviewed the entire appraisal report and all the documentation in the appraisal report to examine the accuracy of the methodology and give an opinion as to the accuracy of the report itself. Connolly testified that he performed his review in conformance with the Uniform Standards of Professional Appraisal Practice, which has a specific guideline for review appraisers. Connolly testified that the 2003 REAC appraisal, as presented, was incomplete and inadequate and has inadequate documentation. Connolly found the valuation sections of the REAC appraisal, the cost, income and sales comparison approaches, lacked supporting documentation and a thorough analysis. Connolly further testified that Kelly's final conclusion of value in the 2003 REAC appraisal was closest to the value indicated by the sales comparison approach; however, this sale was based on a related company purchase of a partial interest, which included numerous assets far removed from comparability to the subject property. Connolly opined that this

[8] Intervenors' counsel argued that Connolly's access to the records of Equistar and physical inspection of the machinery and equipment was restricted by the appellant herein and therefore Connolly's appraisal should be given greater weight in the Property Tax Appeal Board's analysis because of the actions of the appellant. The Property Tax Appeal Board gave this argument little weight in the Board's analysis. The record is clear intervenors never requested a subpoena from the Property Tax Appeal Board requesting certain records or the appearance of persons pursuant to Property Tax Appeal Board rule 1910.68 (Ill. Admin.Code §1910.168).

further weakened the overall reliability of the report. Connolly testified that he could not agree with the conclusions in the 2003 REAC appraisal.

Connolly further testified that Kelly's estimated economic life, effective age and remaining economic life as developed in the 2003 REAC appraisal were poorly supported and were not based on any reliable information included within the report. Connolly felt that REAC should have included a copy of the documents relied upon to prepare the report, such as the Wright Killen report. Connolly testified that when Kelly estimated the subject's life, Kelly utilized a weighted capital investment technique. Connolly testified that he had never seen such a technique. Connolly believed the life of 21 years as used in the 2003 REAC appraisal was flawed. In addition, Connolly had never seen the weighted age life method used in an appraisal of a processing plant. Connolly testified that he would like to have seen the support documentation for the original cost that was presented in the trending schedules and any other information relied upon, including support data for the income and production figures and capacity calculations. Connolly testified that REAC's determination of economic life impacted the subject's final market value. Connolly testified that in the cost approach to value, the estimated economic life had a major impact on the final value. Connolly testified that REAC's determination of a 30 year life with 21 years expired, nine years remaining, based on a weighted investment technique indicated that every asset was depreciated equally at 70%. Connolly explained that if he invested $10,000,000 in 2002, one year ago, that it was 70% depreciated, which is not true in the real world. Connolly testified that because of this, the technique applied by Kelly is not used. Connolly went on to state that if he had an asset that was 25 years old, that it was also depreciated 70% along with an asset that was 2 years old. Connolly testified that this error indicated to him a lack of knowledge on how to depreciate process plant equipment for market value purposes.

Connolly testified that it is not customary for appraisers with machinery and technical specialties designations to use a weighted average age life method to determine physical depreciation when valuing process machinery and equipment. Connolly testified that the accepted method to use for process machinery and equipment is to utilize the chronological age or effective age methodology.

For effective age, Connolly testified that an appraiser would break down each one of the assets into its effective life. Connolly testified that he would have examined each product line, inspected it, examined the rebuild records, maintenance records, and talked with the engineers to get a determination of the expired life and remaining life through field work. Connolly testified that this method would be done for each product line as well as supporting equipment for each line.

For the chronological age method, Connolly testified that he goes by the year of installation and from that used a table for depreciation, such as Marshall Swift. In this case, Connolly used 20 years based on the actual and full life. Connolly testified that each year depreciates down to a point of 20% residual value because the item is still being utilized.

Connolly testified that Kelly's final opinion of value for the subject was impacted because this error impacted the cost approach to value, which was relied upon by Kelly, even though Kelly relied upon the cost approach to a lesser extent. Connolly acknowledged that this error in methodology to determine economic life did not have any impact on the sales comparison approach or the income approach as developed by Kelly.

Connolly further opined that REAC's land value determinations were incorrect because REAC only used two industrial sales along with agricultural sales. Connolly testified that a lot of the sales were smaller in size. Because they were smaller and/or contained agricultural land, Connolly testified they were not comparable to manufacturing or industrial sales. Connolly could not imagine how a 2.8 acre property could be compared to an 864-acre parcel without "heroic adjustments." Connolly testified that there are too many variables involved with adjusting agricultural land to industrial. This would include a change in zoning, the time and cost to change the zoning along with environmental and other studies. Connolly testified that this process could take 10 to 15 years to complete. Connolly testified that industrial land is much more valuable than agricultural land because more income can be produced off industrial land and it can be developed into different areas, warehousing, distribution, industrial, et cetera.

In reviewing REAC's cost new estimates, Connolly testified that in the trending of the alleged original cost to a cost new and then depreciating it, Kelly used incorrect trending factors. Connolly opined that REAC used the wrong base year. Connolly felt that REAC should have used January 1, 2003 as the base year and gone back to 2002 for the 2002 assets. Connolly testified that Marshall Valuation Service depicts an index factor for January 2003 by quarter, January, April, July and September. The factor for 2002 is an average factor for the entire year, which includes assets bought in the beginning of the year and at the end of the year. In addition, Connolly testified that the trending method was also flawed because the information in the original cost column was incorrect. Connolly testified that based on Kelly's testimony, Kelly erred in his methodology because he never took out the retirements prior to 1994. It was Connolly's opinion that from 1995 through 2002, the retirements were not excluded from those years. Therefore, all those retirements in that nine year period stayed in the older assets, and therefore, the older assets were overestimated. Connolly testified that because of this error, the average weighted age determination was given greater weight than it should have been. Connolly testified that the 21 year life would be overestimated;

it would be substantially below 21 because Kelly did not remove the original cost for all of the retirements at the facility from 1994 to 2002. Connolly testified that the $3,875,000 original cost figure used by Kelly on page 93 of the 2003 appraisal was a net figure of additions and deletions; however, it is not all of the additions for the year 2002. In addition, Connolly disputed the base year as used by Kelly. Connolly testified that Kelly should have used a base year of 2003 and not 2002 as depicted on page 93 of 2003 appraisal, which would have increased the trended cost for each year.

Connolly testified that Kelly also erred when he trended replacement cost from the Wright Killen study. Connolly testified that the Wright Killen method used by REAC was taking a replacement cost study performed in 1992 and trending that number up to a 2003 number. Connolly testified that the only thing that can be trended up is the original cost, not the replacement cost. Connolly considered the Wright Killen study worthless, unless it was re-done in 2003. Connolly testified that trending replacement cost is never taught in the machinery and technical services classes offered by the society.

Connolly also disputed the 50% off-site adjustments that Kelly used in his appraisals. Connolly testified that off-site adjustments of 50% are typical for a refinery; however, he has not seen them that high for a chemical plant. Connolly testified that he would normally see off-site adjustments of 20% to 25% for a chemical plant. Connolly explained that the off-site adjustments are items outside the boundary limits, items that are used in support of the process, such as a docking facility or a substation. In addition, Connolly testified that the replacement cost for off-sites should be based on current cost and not on an 11 year old study.

In regards to physical depreciation, Connolly testified that REAC could have performed a lifing study at the facility and then for the industry in general. Connolly testified that Kelly had all the retirements for the facility since it began operation and all of the additions at the facility. Connolly further testified that REAC could have analyzed that information to see what the actual life of each major component was and come up with a lifing schedule based on the plant's experience, which is the best way to do it. Connolly testified that REAC could also have used the Marshall Valuation depreciation schedule.

Connolly felt there was no supporting documentation for Kelly's determination of functional obsolescence. Connolly testified Kelly used $0.02 per pound on the total capacity of the facility rather than the actual production. Connolly testified that when a facility has excess costs, an appraiser must examine the excess cost and determine what part of the excess cost is really a benefitted cost. The excess cost must be adjusted for the federal and state tax factors. Connolly next questioned why Kelly did not examine what parts of the $0.02 per pound operating penalty were curable or incurable. Connolly testified that the

REAC appraisals have no foundation, use the wrong capacity and do not adjust for taxes.

Connolly also disputed the nine year remaining life of the plant used by REAC. Connolly testified that the nine year remaining life of the plant is wrong because the weighted average is wrong because the asset listing is wrong. Connolly testified that the subject's actual net operating income of $61,171,848 (page 103, Appellant's Exhibit No. 2) strongly indicates there is no economic or abnormal functional obsolescence and in fact depicts the subject is operating at least 20% or more above industry standards.

Connolly next made numerous corrections to page 7 of his review of REAC's appraisal report regarding REAC's cost approach, depreciation calculations and methodologies.[9]

Connolly testified that it was an error on REAC's part to value a process plant with machinery and equipment utilizing the income approach because the tangible and intangible assets are captured. Connolly testified that there is not an income stream directly identifiable only to the tangible assets. Connolly testified that he has never seen an income approach used on a processing plant in his 30+ years of experience. When questioned as to why he would still request financial statements from the client, Connolly testified that the financial statements were needed to examine how the property sits in competiveness with others in the industry, examine excess costs, deficiencies and capacity utilization numbers to see if economic obsolescence is present. Connolly testified that when examining the income figures for an analysis utilizing the cost approach, he would use both the subject's and the industry. He would not rely solely on the subject's historical income and expenses. Connolly testified that he would compare the subject's income and expenses to the industry.

In regards to REAC's approach of determining revenue and cost in the income approach to value, Connolly testified that REAC used industry standards sometimes, actual inflated costs and projected costs at other times. It was Connolly's opinion that REAC should have been more consistent.

Connolly further testified that he does not agree with REAC's determination of "goodwill" as found on page 134 of the 2003 appraisal. Connolly did not find that it was well supported.

In regards to the sales comparison approach, Connolly gave REAC's analysis no weight. Connolly testified that one sale does not make a market, especially when it is a partial sale. The sale involved a partial interest to someone who had a controlling interest. Connolly felt the analysis of the partial sale should

[9] Corrections were the operating penalty should be changed from $63,035,000 to $73,035,000; stabilized earnings of $52,060,000 should be $48,050,000; and required earnings of $33,330,000 should be $39,330,000.

have been very detailed. Connolly testified an allocation appraisal was performed on the partial sale, which he reviewed. The allocation appraisal was performed by American Appraisal. The one thing Connolly found helpful in the American Appraisal was the replacement cost new of the subject for 2003 as of the date of sale was $1.15 billion. Connolly found that this amount was just verification that the wrong information was used in REAC's 2003 cost approach. Connolly testified that the American Appraisal trended up the original cost. Connolly also disputed REAC's use of a gross income multiplier in its sales comparison approach. Connolly had never seen it used on machinery and equipment, nor has he seen it taught as an accepted methodology to appraise machinery and equipment because it also captures some intangibles. Connolly testified that using the gross income multiplier values the entire income stream.

In summary as to his review report, Connolly testified that overall REAC did a very nice job of describing the industry, but its [REAC] utilization of the cost, income, and sales comparison approaches were lacking support. Connolly testified that REAC utilized incorrect techniques and he [Connolly] could not justify the value conclusion determined by REAC. Connolly testified that this opinion would be the same for the 2004 REAC appraisal because the same techniques and methodologies were used.

Connolly next testified regarding his appraisal report of the Equistar Chemicals facility as of January 1, 2003 (Intervenors' Exhibit N).[10] The purpose of his appraisal report was to determine the market value of the subject property for ad valorem tax purposes. The property rights appraised were all rights existing in fee simple estate as of the appraisal date. Connolly found the subject to be in average condition for its life based on his inspection of the subject and general knowledge of the industry. Connolly did not perform an income approach or a market approach in estimating a value for the subject.

Connolly testified that he did not perform a market approach to value because there were no market sales of a hundred percent interest in similar type properties. Connolly testified that there was only one sale of a partial interest of which this was one of a multitude of properties across the world and was not truly indicative of a comparable property. This one sale, previously discussed herein, was used by Kelly, and involved the subject property. Connolly felt there was insufficient documentation backing up the sale, and he had some questions about whether it was an arm's length transaction.

[10] Connolly did not prepare a 2004 appraisal of the subject property,, however, he submitted an updated valuation letter dated December 31, 2007 for his original report dated July 1, 2006 for a value date of the subject of January 1, 2003, which indicated the subject's estimated market value as of January 1, 2004 remained $313,800,000 (Intervenors' Exhibit P).

Connolly testified that he did not perform an income approach to value because he could not find an income stream that would be directly attributable to the tangible assets.

Connolly was able to develop a cost approach to value. Connolly testified that he had the correct base to start with, and from that he could apply a trending factor to estimate the reproduction cost new and apply a depreciation factor to it. Connolly testified that the cost approach represents the maximum value that a buyer would pay for a piece of property.

Connolly utilized two land sales to estimate the value of the subject's land using a sales comparison approach. Connolly relied upon only two land sales because those were the only land sales he had that he could call and verify. The two land sales occurred between 1998 and 2000. Both of the land sales were zoned industrial. The land sales were adjusted for vehicle access and size. Land sale #1 consisted of 85 acres, was located in Channahon and sold for $2,230,000 or $26,235 per acre. Land sale #2 consisted of 160.91 acres, was also located in Channahon and sold for $2,155,000 or $13,395 per acre.[11] Connolly estimated a value of $17,000 per acre for the subject's 864.11 acres or $14,700,000, rounded. These two land sales were also used by REAC in its cost approach to value.

In determining a cost new for the subject, Connolly determined a reproduction cost new because he did not have sufficient information to do a replacement cost new analysis. Connolly testified that he took a list of original installed costs as reported in the 2003 REAC appraisal (Appellant's Exhibit No. 2, page 85) and multiplied that by the proper trending factors to get the current reproduction cost new as of January 1, 2003. Connolly next subtracted physical depreciation taken directly from Marshall Valuation Service based on the 20 year life derived from a chronological age of the assets. Connolly reviewed and relied upon the Wright Killen report as presented in the REAC appraisal because he [Connolly] was told in a letter from the company [Equistar] that it was the accurate installed historical cost, original cost of all the assets at the facility as of January 1, 2003, and included all costs to put the equipment there and included all the equipment.

In order to determine the subject's useful life, Connolly testified that he utilized Internal Revenue Service Publication 946, which depicts a 22 year life for property such as the subject. In order to be conservative, Connolly used a 20 year life. Internal Revenue Service Publication 946 is a tool used for depreciation of assets. Connolly testified that Publication 946, "Bulletin F" was based on studies of actual retirements in the subject's particular industry. Connolly then used the Marshall Swift 20 year life schedule based on a chronological age of the assets coming down to a floor of 20%. Connolly testified

[11] Actual sales price was $1,320,000 with demolition costs of $835,000 for a total cost of $2,155,000 (Intervenors' Exhibit N, page 45).

that this methodology is a tool of last resort. Connolly further testified that he used this tool of last resort because he was restricted from all the information he needed to utilize anything else. Connolly explained that the composite factor is the factor that combines appreciation and depreciation for the year in question. In the first step, the first component is a trending factor or multiplier that measures the change in purchasing power of dollars over a period of time. Connolly testified that he was taking the prior year's dollars up to a current date, inflating the prior year's dollars to make them equal to today's date using the Marshall Valuation Service, chemical index. Connolly used 2003 as the base year to trend the original costs. Connolly explained that in the first year, January 1, 2003, there would be no depreciation, so it would be 100% and effective age of one year would be a 2002 asset that is depreciated 3%. Connolly testified that the inverse of that number or 97% is multiplied by the multiplier to arrive at a composite factor for each year. Next, the composite factor is multiplied against the original reported cost, which was taken from page 85 of appellant's Exhibit No. 2 (REAC's 2003 appraisal). Connolly testified that this method depicts a market value for the building and process equipment. Using this method, Connolly estimated a value for the subject of $313,800,000 as of January 1, 2003. Connolly testified that this estimate of value was conservative because he used a 20 year life and because his reproduction cost is substantially below the reproduction cost by $300 million as used in the American Appraisal report.

In addition, Connolly testified that his estimate of value is also below the net book value of the company which Equistar gave them on an asset run, which was $338+ million dollars. Connolly testified that the asset run was given to him after he prepared his 2003 appraisal. Connolly concluded the asset run was on a net book value basis because he had a reported book value of approximately $500 million, taken from page 85 of the 2003 REAC appraisal, and the asset run for the next year dropped to $338 million or a $160 million dollar decrease. Connolly opined that Equistar did not get rid of a good portion of the plant, so that amount, $338 million, had to be a net book value. Connolly testified that the list he was given did not look like a typical asset list and that is why he believed it depicted net book value instead of an original cost asset list. Connolly found no evidence of any functional or economic obsolescence. Connolly testified that he found the subject's income stream was higher than the standard, and after performing the same calculations that Kelly did, he [Connolly] concurred with Kelly that no economic or functional obsolescence existed.[12]

Connolly testified that as of January 1, 2003 the subject had a market value of $313,800,000. Connolly was next questioned regarding his updated valuation letter dated December 31, 2007 regarding the Equistar Morris Facility as of January 1, 2004

[12] The record reflects Kelly estimated the subject contained $36,500,000 of functional obsolescence.

(Intervenors' Exhibit P). In order to update his valuation, Connolly examined various documents in his file, including the American Appraisal report and other information, production information, unaudited financials and concluded that the subject's estimated market value for January 1, 2004 was the same as January 1, 2003.

Connolly testified that the asset list (Intervenors' Exhibit T) provided by Equistar and the American Appraisal impacted his decision that there was no significant change in the market value for the subject from January 1, 2003 to January 1, 2004. The asset list indicated to him [Connolly] that the net book value of the entire facility was $338 million. The final value that he [Connolly] estimated at $313 million was conservative because typically net book value is lower than market value. In addition the American Appraisal report gave him an insight into the conditions in the industry for the next five years, increased demand, increased production and higher reproduction costs.

Connolly testified that his 2003 and 2004 opinions of value for the subject include the subject's land, buildings and the process equipment. Connolly further testified that his opinions of value do not include any inventory, working capital or goodwill. Based on this evidence, the intervenors requested the subject's assessment reflect Connolly's market value appraisal.

During cross-examination, Connolly was questioned regarding various errors made in his calculations. Connolly admitted that three days prior, his opinion of the market value of the improvements only at Equistar was $299,100,000. After making the corrections of approximately $14 million, Connolly testified that those corrections would not change his opinion of value for the subject.

The witness was next questioned on the differences between the Aux Sable Plant and Equistar.[13] Connolly acknowledged that the American Appraisal included excerpts regarding external obsolescence, functional obsolescence, physical depreciation and market value. Connolly testified that he did not rely on this information because he could not verify the numbers because the American Appraisal was extremely redacted. However, Connolly admitted that he relied upon the American Appraisal report's replacement cost new of the subject of $1.15 billion even though he could not verify the amount.

Connolly further admitted that he used the Marshall Valuation Costing Manual to trend the reported historical costs and also used the Marshall Valuation Chemical Index to trend current costs because he thought they were a reliable source. In addition, Connolly acknowledged that he used the Marshall Depreciation Table to estimate depreciation. Connolly also acknowledged that Marshall also provides a life estimate for machinery and

[13] Both counsel stipulated that the manufacturing processes at the two facilities are different.

equipment in the chemical industry; however, he did not use Marshall to estimate the subject's life. Connolly testified that he used IRS Publication 946 to estimate life. Connolly acknowledged that IRS Publication 946 has an age of 22 years for property such as the subject; however, he [Connolly] utilized 20 years to allow for a conservative approach to value the equipment and real property. Connolly testified that when he used IRS Publication 946, he determined typical life, which indicated how long an asset would last given proper maintenance, proper preventative maintenance and expected life of an asset. Connolly admitted that the term "typical life" is not defined in appraisal texts. Connolly admitted that in using IRS Publication 946, he did not determine the physical life of the assets at the plant. Connolly acknowledged that "physical life" has an accepted definition in the appraisal field. Further, Connolly acknowledged that he did not determine economic life, even though "economic life" has an accepted definition in the appraisal field. Connolly also acknowledged that he did not determine "useful life." Connolly acknowledged that IRS Publication 946 provides information for a number of different industries. Connolly testified that he attempted to choose the industry classification that best represented the subject property.

Connolly was next questioned regarding the Marshall Valuation Service, depreciation table found on page 63 of his appraisal report. The third line reads "[t]hey [the tables] are averages and as such must be used with care using effective age and modifying for above or below normal utilization, wear and tear, obsolescence, and buyer preferences. . . ." Connolly admitted that he did not estimate an effective age for the subject, he used the chronological age. Connolly acknowledged that the Marshall Depreciation chart is not specific to the chemical industry, it would also apply to an item used in the automotive industry or shoemaking industry. Therefore, Connolly admitted that the depreciation table cannot account for any loss of value that applies solely to the chemical industry.

Connolly was also questioned regarding a change that was required to be made on page 48 of his appraisal regarding the cost approach.[14] Connolly acknowledged that his office was also preparing an appraisal of the Aux Sable plant at the same time this appraisal for Equistar was being prepared. Connolly also acknowledged that David Parks, P.E. performed a cost overrun analysis on the Aux Sable plant which was referenced in the REAC appraisal of Aux Sable. Connolly reiterated that he never reviewed the Wright Killen report. Connolly then admitted that the sentence, as corrected, inserting Wright Killen for David Parks, would indicate he reviewed the cost analysis as performed by Wright Killen, which was not correct; it was a misstatement. The witness was given a copy of a document entitled "Publication 946, How to Depreciate Property, Section 179, Deduction, Special Depreciation Allowance, MACRS listed property for use in

[14] The name David Parks, P.E. was changed to Wright Killen in the first paragraph.

preparing 2003 returns." Connolly admitted that the description of Class 28.0 as contained in Publication 946 more closely resembles the Equistar operation at the Morris facility than the description of alkaline products as used by Connolly in his appraisal report from Schedule "F." Connolly acknowledged that the class life for Asset Class 28.0 taken from IRS Publication 946 was 9.5 years. Connolly acknowledged that Asset Class 49.25 from IRS Publication 946, with a life of 22 years describes the Aux Sable plant. Connolly admitted that David Park's cost overrun report was used in the Aux Sable plant appraisal prepared by REAC. Appellant's counsel then suggested that Connolly used the 22 year life that applied to the Aux Sable plant and just did not remove it from Equistar's appraisal, the same way David Park's name was not removed. Connolly testified that his firm actually relied upon Bulletin F, and not IRS Publication 946, which is why his firm included it in the back of the appraisal; the error on page 49 regarding IRS Publication 946 was a misquote. Connolly testified that they pulled over text from the Aux Sable appraisal, but they did use Bulletin F as their guideline for alkaline and adjusted it from 22 years down to 20 years.

During cross-examination, Connolly admitted that he is not a licensed real estate appraiser in the State of Illinois. Further, Connolly testified that prior to the Aux Sable and Equistar appraisals; he may have appraised only the Alcoa facility once, probably in the early 1980's. Connolly acknowledged that he did not hire a local appraiser who is more familiar with local values to assist him in this appraisal. Connolly testified that his office used the Co-star system.

During redirect, Connolly testified that, based on the testimony he heard from Kelly, the market value column would go higher in the years 1993 to 2002 because it depicts a reported historical net cost, not original cost, of all the assets. Connolly testified that the additions were netted of the deletions, therefore, for those years the items were understated in value. Connolly testified that making those changes would not change his opinion of market value of the subject property made in his January 1, 2003 appraisal.

Connolly was next questioned regarding a letter dated May 30, 2003 from Wendell Westlake addressed to David Henderson, Supervisor of Assessments for Grundy County. Connolly testified that the letter depicted 2002 additions to the Equistar plant of approximately $5.1 million. Connolly was then directed to page 85 of the 2003 REAC appraisal which depicted original costs of $3.8375 million. Connolly testified that the letter indicated to him that the assets in 2002 were understated by 25% to 30% which gave him concern for all other years.

During re-cross examination, Connolly was questioned as to why his opinion of market value for the subject would remain the same if the numbers in his calculation that he first used to estimate market value increased or decreased. Connolly testified that his

estimate of value was as accurate as the information supplied to him. Connolly admitted that the use of IRS Publication 946 or IRS depreciation tables as a guide is not contained in Valuing Machinery & Equipment, a book he co-authored, and nor is it in Appraisal of Real Estate, 12th Edition.

After hearing the testimony and considering the evidence, the Property Tax Appeal Board finds that it has jurisdiction over the parties and the subject matter of the appeal. The Board further finds the evidence in the record as submitted by both the appellant and the intervenors support a reduction in the subject's assessment.

The appellant contends the market value of the subject property is not accurately reflected in its assessed valuation. When market value is the basis of the appeal the value of the property must be proved by a preponderance of the evidence. National City Bank of Michigan/Illinois v. Illinois Property Tax Appeal Board, 331 Ill.App.3d 1038 (3rd Dist. 2002). The Board finds the appellant met this burden of proof and a reduction in the subject's assessment is warranted.

The Board finds the best evidence of market value in the record is the appraised value presented by Kelly on behalf of the appellant. Kelly developed a cost, income and a limited sales comparison approaches to value in estimating the subject property had a market value of $275,000,000 as of January 1, 2004.

Under the cost approach Kelly utilized nine land sales to estimate the subject's site value. All of the land comparables were located in the Grundy and Will County areas. The comparables ranged from 2.8 acres to 160.90 acres and sold from September 1998 to May 2002 for prices ranging from $3,200 to $28,571 per acre. Kelly adjusted the comparables for date of sale, size, zoning and overall similarity. Based on the data, Kelly estimated the subject site had a value of $8,000 per acre for a total land value of $6,915,000, rounded. Connolly used only two land sales, both industrial zoned, which were also included in Kelly's land sales. Connolly estimated a land value for the subject of $17,000 per acre or $14,700,000, rounded. The Board finds Kelly made logical and proper adjustments to the land sale comparables. The Board further finds Kelly presented clear and concise testimony regarding each sale. Connolly did not appear to be familiar with the general locale where the land sales were located. During his testimony, Connolly could not give directions to the comparable land sales and he could not provide a description of the location, even though, he [Connolly] determined the land comparables were similar in location to the subject. In addition, Connolly testified that he adjusted both sales downward for size. However, during cross-examination, Connolly admitted that he only adjusted one land sale downward for size and the other one was only adjusted for date of sale, even though the comparable sale contained 160.91 acres as compared to the subject's 864.11 acres. Based on the testimony

and credibility of the witnesses, the Board finds Kelly's estimate of the subject's land value was more credible.[15]

Kelly next developed the replacement cost new of the improvements utilizing three methods: historical cost trending, engineering estimates trended forward and Chemical Data, Inc. For the historical cost trending analysis, Kelly examined the capital expenditures made at the plant from its inception and then trended those costs forward to what the trended cost would be as of January 1, 2004 using the Marshall cost book that publishes trending factors for the chemical industry. The historical cost trending method indicated a cost new for the subject of $875,000,000, rounded, with a weighted average age of 22 years. Kelly testified that a weighted average age was used because over different points in time capital infusions for machinery and equipment were applied.

For the engineering estimates trended forward, Kelly utilized an engineering report performed by Wright Killen which developed a reproduction cost new of the entire plant in 1992 and in 1993. The evidence depicted Wright Killen specializes in petrochemical analyses and engineering work. Kelly testified that he spoke with Pete Killen regarding the subject and used the Wright Killen 1992 price per pound and trended it up to 2004. After trending the price per pound, Kelly multiplied that amount by whatever the 2004 capacity was for a particular product line. After trending each product line and multiplying the price per pound by the subject's 2004 capacity and adding in the estimated capitalized interest during construction, Kelly estimated a total replacement cost for the subject of $827,300,000.

The third method Kelly used to develop the replacement cost new of the improvements was the use of a 2002 publication entitled Chemical Data, Inc. A cost per pound was abstracted from Chemical Data, Inc. and applied to the subject's annual capacity for each product line to arrive at an estimated cost of $886,600,000. This estimated cost was then trended using Marshall to indicate a total trended cost new of $904,400,000.

Kelly reconciled all three cost methods giving less weight to the historical cost method based on the older installation costs. Based on the three methods and analysis, Kelly estimated a replacement cost new of the subject improvements of $870,000,000.

Kelly estimated a weighted average age for the subject of 22-years, which was divided by a total economic life of 30 years to arrive at an estimated physical depreciation of 73%. The replacement cost new of $870,000,000 was multiplied by the 73% depreciation to arrive at physical depreciation of $635,100,000.

[15] Both parties stipulated regarding the treatment of land values to avoid double taxation, because the appeal involved only 3 of 15 parcels at the subject property and both appraisers estimated a land value for the entire 15 parcels. The Property Tax Appeal Board has examined the stipulation and finds that the allocation of property values is proper and just.

Functional obsolescence was described as operating penalties at the subject plant caused by outdated and inefficient facilities. The operating penalty is estimated on the basis of what excess cost of production is incurred by operating the existing facility versus the cost of operating a modern facility. Kelly estimated the subject incurred a $0.02 per pound penalty which was multiplied by the stabilized ethylene production of 1.125 million pounds to arrive at an estimated annual operating penalty of $22,500,000. Kelly then converted this amount to a present value and subtracted physical depreciation of 73% to arrive at a net functional obsolescence of $33,350,000, rounded. Kelly compared the required earnings to the stabilized earnings from the income approach and determined external obsolescence was not present.

A summary of Kelly's cost approach to value depicts a total replacement cost new of $870,000,000 less depreciation to arrive at a depreciated value for the improvements of $201,550,000. A land value of $6,915,000 was added to arrive at an estimate of value for the real estate and processing machinery and equipment using the cost approach of $210,000,000. Kelly testified during the hearing that he gave less weight to the cost approach and more specifically the trended historical costs than he did for the other two methods, the Wright Killen study and industry publications.

Connolly, the intervenors' appraiser, also developed a cost approach in estimating the subject's value. Connolly also trended the original installed costs as reported in the 2003 REAC appraisal and multiplied that by a trending factor to arrive at a current reproduction cost new as of January 1, 2003. Connolly next subtracted physical depreciation taken from Marshall Valuation Service based on a 20 year life which was determined from a chronological age of the assets Connolly next determined the subject's useful life to be 20 years based on his testimony that he used IRS Publication 946. However, the testimony revealed he used Schedule F, which did not have an exacting definition of the subject's processing equipment. Even though Schedule F depicted 22 years, Connolly used 20 years and the Marshall Swift 20 year life schedule based on a chronological age of the assets. Connolly admitted this was a tool of last resort; however, he used this data, because he was restricted in the information presented to him. Connolly testified that he took the prior year's dollars up to the current date and inflated them to make them equal to today's date using the Marshall Valuation Service, chemical index. Using 2003 as a base year to trend the original costs and multiplied by the effective age to arrive at a composite factor for each year. The composite factor was then multiplied against the original reported cost. Using this method, Connolly estimated a value for the subject of $313,800,000 as of January 1, 2003. Connolly opined that this value was conservative because he used a 20 year life instead of the 22 year life as depicted in Schedule F. Connolly found no evidence of functional or economic obsolescence.

During cross-examination, Connolly testified that after making corrections to his appraisal amounting to approximately $14 million (actually $13,068,639), he still would not change his opinion of value. Connolly also discounted various excerpts taken from an appraisal prepared by American Appraisal because he could not verify the numbers; however, even though he could not verify American Appraisal's estimated replacement cost new, he used their estimate of value to validate his own reproduction cost new. The Board finds Connolly's testimony and methodologies were not credible.

Connolly has an exhaustive list of accomplishments and titles; however, he is not a licensed appraiser in the State of Illinois and did not use a local appraiser, who could have assisted him in determining local land values. In addition, even though Connolly has authored various treaties and papers on valuing machinery and equipment, he used an IRS depreciation table, a method which is not contained in any book he has authored, nor are the use of these tables contained in the Appraisal of Real Estate, 12th Edition. The Board finds Connolly went against his own teachings and learned treatises. Connolly testified that one of the important factors when using costs and which tables to use, whether it be Marshall Swift or Wright Killen, that it was important to maintain consistency (Transcript pages 1116-1117). However, the Board finds Connolly's use of the IRS publications to estimate the subject's life were not consistent with his choice of using the Marshall Valuation Costing Manual, the Marshall Valuation Chemical Index and the Marshall Depreciation Table, even though Marshall provides a life estimate for machinery and equipment in the chemical industry. Connolly appeared to selectively use Marshall for cost trending and depreciation estimates, but not for his estimate of depreciable life. Further, Connolly appeared to have inserted language from an appraisal prepared for Aux Sable, which was being prepared during his preparation of the Equistar appraisal, into the Equistar appraisal by error. Connolly made various changes to the errors in his report, including the removal of the name David Parks, and inserting the name of Wright Killen, which would indicate his examination of the Wright Killen report. However, Connolly then admitted that he never reviewed the Wright Killen report. The Board gave less weight to Connolly's depreciation estimate because he used IRS Schedule F, when he reported that he used IRS Publication 946 to estimate the subject's life. Connolly admitted that IRS Publication 946 contained a description of the assets that more closely resembled the subject than did the Schedule F that he used, which described an alkaline plant. Publication 946 depicts a life for assets such as those used at Equistar of 9.5 years and not the 20 years he ultimately used. Appellant's counsel argued that this mistake, if corrected, would have opened the door for Connolly to account for obsolescence. Connolly admitted on cross-examination that if a process line consistently operates at less than the national average of operation for that industry or product, that it indicates obsolescence might be present, along with other factors. Connolly acknowledged that it does not mean

obsolescence is necessarily present, but it does mean an appraiser should consider the possibility that obsolescence may be present. Connolly testified that he did not rely, refer or utilize Equistar's reported operating rates, even though they were presented in the 2003 REAC appraisal. Appellant's counsel then argued that because he did not use or refer to the subject's operating rates as reported, he could not compare them to the national average; therefore, he [Connolly] never investigated the possibility of whether obsolescence existed. The record depicts that the subject's operating rates were below the national average as follows: LDPE - for two out of three years; LLDPE – for each year; PP - for each year; and for Ethylene - for one out of three years. Connolly ultimately determined that the subject does not suffer from functional or economic obsolescence because the subject's income stream was higher than the standard. When questioned during cross-examination as to what standard he was referring to, Connolly could not recall.

Further, when questioned on the accepted definitions of "life", Connolly appeared to be evasive and testified that he determined the subject's "typical life"; a term that he admitted does not have an accepted definition in the appraisal field. For these reasons, the Board finds Kelly's estimate of value for the subject using the cost approach to value the subject is more credible, even though Kelly gave this approach less weight in his final conclusion of value.

Kelly also developed an income approach to value. Kelly testified that petrochemical plants are income producing plants that have an identifiable income stream. Kelly testified that plants, such as the subject are typically traded on the open market based on their revenue producing capability. Kelly examined the subject's historical operating statements from 1999 to 2003 to arrive at an average price per pound for each product line. Kelly next determined industry prices, operating rates and projections using recognized publications for each product line. Kelly then estimated a total stabilized revenue for the subject of $541,220,000 for 2004. Kelly then analyzed the manufacturing and production costs for the subject for each product line which indicated total stabilized expenses for all products of $487,500,000. Kelly then verified his expense estimates by comparing industry averages with the subject's profit margin. After deducting stabilized production expenses from the stabilized revenues, Kelly estimated the subject's stabilized net income of $53,720,000. Kelly then applied a loaded capitalization rate of 16.6%, using the band of investment technique to arrive at an estimate of value of the going concern, which included tangible assets, working capital and business value. Kelly then deducted working capital of $33,000,000, which was derived from the allocated working capital apportioned to the subject from its proportionate share of its 2003 revenues that the subject contributed to the entire Equistar Company. Kelly again tested this estimate of working capital against industry publications which validated his estimate. Kelly next deducted business value of $44,600,000 taken from the net income

attributable to each class of assets. Kelly estimated a value for the subject of all real estate and tangible property of $250,000,000, rounded. Connolly did not develop the income approach to value because he concluded it was inappropriate and not possible to attribute income to individual tangible units that operate in concert with other units together with all other economic factors, including intangibles. However, Connolly admitted the income approach could be used to value all of the assets, tangible and intangible (Transcript page 992-993).

The Board finds the Connolly's argument that it was inappropriate and not possible to attribute income to individual tangible units that operate in concert with other units together with all other economic factors, including intangibles unconvincing. In Springfield Marine Bank v. Property Tax Appeal Board, 44 Ill.2d 428 (1970), the court stated:

> [E]arning capacity is properly regarded as the most significant element in arriving at "fair cash value". . . Many factors may prevent a property owner from realizing an income from property, which accurately reflects its true earning capacity; but it is the capacity for earning income, rather than the income actually derived, which reflects "fair cash value" for taxation purposes." Springfield Marine Bank v. Property Tax Appeal Board 44 Ill.2d 428 at 430-431.

Actual expenses and income can be useful when shown that they are reflective of the market. The Board finds Kelly compared the subject's actual income earning capacity with industry prices, operating rates and projections.

Kelly also developed a sales comparison approach to value. Kelly utilized two methods. First, Kelly examined sales data to develop a price per pound of capacity and applied this to the subject's product line capacities. Second, Kelly developed a gross income multiplier from the sales data, which he applied to the gross income of the subject. Kelly utilized a sale transaction that included the sale of an ownership interest in the subject property. The evidence revealed Occidental Petroleum Corporation sold a 29.5% ownership interest in Equistar to Lyondell Chemical for $452,000,000. Kelly examined this sale on a price per pound of annual finished capacity. Kelly then made adjustments to account for a minority discount and assumption of long term debt. Kelly applied an average unit price of $0.22 per pound of finished capacity to the subject's annual finished capacity of 1.670 million pounds which indicated a value for the subject's going concern of $367,400,000. Kelly then deducted out working capital and goodwill as described above to arrive at a concluded value of $290,000,000. Kelly also examined this sale transaction through the use of a gross income multiplier. Kelly adjusted the gross income multiplier to account for differences in expense ratios. Applying an adjusted gross income multiplier of 0.70 indicated a value for the real estate and tangible improvements of $260,000,000, rounded. Kelly then reconciled the

two analyses and concluded a value for the subject using the sales comparison approach of $280,000,000. Although the intervenors challenged the quality, validity and reliability of Kelly's sales analysis, intervenors offered no sales or market data to challenge or refute Kelly's conclusion of value under the sales comparison approach.

Kelly testified that he did not make any allocation as to what the pollution control items would contribute to the value of the property, nor did he deduct any value attributable to the pollution control equipment (Transcript, page 570). Connolly testified that if the pollution control facilities were included in the historical costs, then they were included in his market value estimate (Transcript, page 1113). Therefore, the Board will not apply a value to the pollution control improvements or the parcels on which they are located.[16]

In conclusion, after comparing the evidence and testimony presented by the parties, the Property Tax Appeal Board finds the evidence and testimony presented by the appellant through its appraiser, Kelly, to be the most credible and best evidence of market value in this record.

Based on this record, the Property Tax Appeal Board finds the subject property had a market value of $275,000,000 as of January 1, 2004. Since market value has been determined, the 2004 three year median level of assessment for Grundy County of 33.33% shall apply.

[16] The evidence depicts the pollution control items are located on parcels 03-20-200-014 and 03-21-100-013, which are not included in this appeal.

This is a final administrative decision of the Property Tax Appeal Board which is subject to review in the Circuit Court or Appellate Court under the provisions of the Administrative Review Law (735 ILCS 5/3-101 et seq.) and section 16-195 of the Property Tax Code.

Chairman

Member

Member

Member

Member

DISSENTING:

C E R T I F I C A T I O N

As Clerk of the Illinois Property Tax Appeal Board and the keeper of the Records thereof, I do hereby certify that the foregoing is a true, full and complete Final Administrative Decision of the Illinois Property Tax Appeal Board issued this date in the above entitled appeal, now of record in this said office.

Date: April 22, 2011

Clerk of the Property Tax Appeal Board

IMPORTANT NOTICE

Section 16-185 of the Property Tax Code provides in part:

"If the Property Tax Appeal Board renders a decision lowering the assessment of a particular parcel after the deadline for filing

complaints with the Board of Review or after adjournment of the session of the Board of Review at which assessments for the subsequent year are being considered, the taxpayer may, within 30 days after the date of written notice of the Property Tax Appeal Board's decision, appeal the assessment for the subsequent year directly to the Property Tax Appeal Board."

In order to comply with the above provision, YOU MUST FILE A PETITION AND EVIDENCE WITH THE PROPERTY TAX APPEAL BOARD WITHIN 30 DAYS OF THE DATE OF THE ENCLOSED DECISION IN ORDER TO APPEAL THE ASSESSMENT OF THE PROPERTY FOR THE SUBSEQUENT YEAR.

Based upon the issuance of a lowered assessment by the Property Tax Appeal Board, the refund of paid property taxes is the responsibility of your County Treasurer. Please contact that office with any questions you may have regarding the refund of paid property taxes.