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November 19th, 2013

Rebecca Martin
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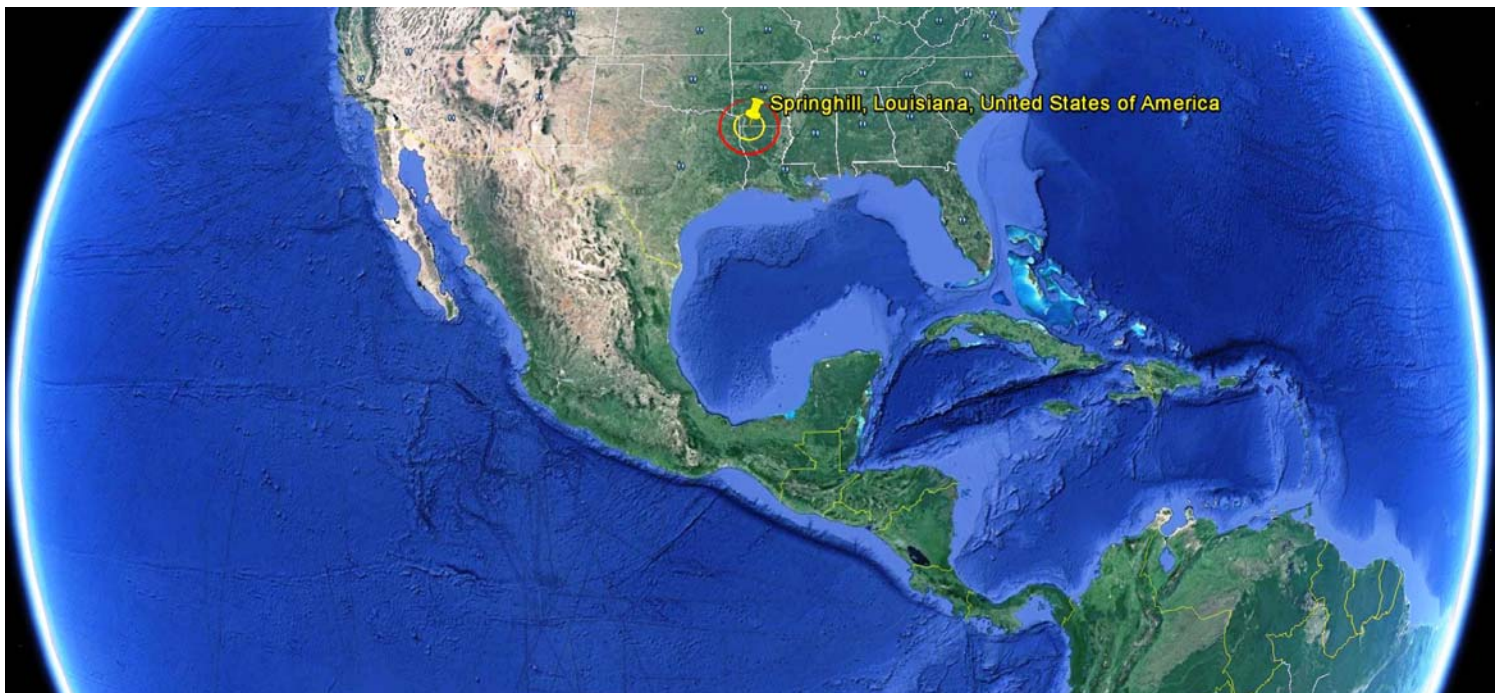
Re: Pine Sawtimber Supply & Demand Study – Springhill, North Webster Parish, Louisiana, USA

Study Assignment: To determine the annual sustained supply of harvestable pine roundwood sawtimber trees standing in the woods (stumpage) within a 50-mile radius of Springhill, Louisiana and competing mill consumption impact within 100-miles based on each mill’s competitive 50-mile radius overlapping impact.

Ms. Martin:

Per your directed commission, contained herein is the report for the Supply & Demand Study of privately owned pine sawlog standing trees (stumpage) in managed forests and available for purchase by mills within a 50-mile radius of the City of Springhill; and overlapping competing sawmill consumption within 100-mile radius of Springhill in North Webster Parish, Louisiana in the United States of America (map below).

Based on this study, the annual sawlog stumpage supply available for purchase within 50-miles of Springhill is **4.3 million** “US short green tons” herein referred to as “tons” (all narrative numbers are rounded). Competing sawmill consumption within 100-miles is **2.6 million** tons, leaving a pine sawlog stumpage supply balance for competitive consumption, by a new sawmill, of **1.7 million** tons per year (refer to table below and attachments 1, 2 and 3).



*yellow is 50-mile supply radius; red is 100-mile consumption radius

The current standing sawlogs within 50-miles of Springhill are 60.2 million tons (S3) of which 11.2 million tons (S5) are ready for harvest with 4.3 million tons (S7) available on an annual sustained basis for harvesting. To determine a solitary number for sustained annual harvest, removals were extrapolated until the net growth was set to zero (R1), and the ending tons (S14) equaled the beginning tons (S3), verifying the surplus. The growth to drain ratio was a positive 1.7 (R2) and competition consumption was 2.6 million tons (D6) providing a competitive annual supply balance available for consumption by a new facility of 1.7 million tons, with minimum impact on existing facilities, as summarized below:

2013 Sawtimber Summary		
Description	Amount	Reference
Total Sawlogs Tons (S3)	60,200,000	$S3 = S17 + S31 + S45 + S59$
Annual Sawlogs Available for Harvest (S5)	11,200,000	$S5 = S19 + S33 + S47 + S61$
Sustained Annual Sawlog Harvest (S7)	4,300,000	$S7 = S21 + S35 + S49 + S63$
Net Annual Growth; set to zero (R1)	0.00%	R1
Total Tons after Removal with Growth (S14)	60,200,000	$S14 = S28 + S42 + S56 + S70$
Annual Growth Drain Ratio (R2)	1.7	$R2 = S7 / D6$
Competitively Annually Consumed Tons by Other Mills (D6)	2,600,000	D6
Competitive Available Annual Supply Balance (R3)	1,700,000	$R3 = S7 - D6$

*References: S = Supply; D = Demand; R = Results

In typical stable markets, the majority of sawlogs is consumed within 50-miles of its point of harvest. The excess supply within 50-miles of Springhill and scarcity of consumers within 100-miles results in a favorable climate for wood acquisition at Springhill. If distant mills were attracted to the Springhill area for wood acquisition as a result of the surplus, then they would need to pay higher inbound transport costs making wood from the Springhill “basket” more expensive to distant mills than to a facility at Springhill. This will tend to dampen tendency for rising stumpage prices from a new mill. However, if markets became heated, the Springhill facility will be suitably positioned to compete due to its location in the heart of an area of significant surplus and its strategic low inbound hauling costs.

In the subject area, 50-mile radius comprising 5 million acres, sawtimber is the primary product grown in the planted pine stands and natural pine stands collectively comprising 3.3 million acres (66% of total area):

- 1) Planted pine stands, 1 million acres (19%) in 50-mile radius, reach maturity in 25 - 30 years with average “Mean Annual Increment” (MAI) of 5.0 tons/acre/year of merchantable wood of which 70% is sawtimber (MAI 3.5 tons/acre/year), and the remainder of 30% is pulpwood (MAI 1.5 tons/acre/year):
 - a. Planted stands are typically thinned 1 - 2 times and then final harvested:
 - i. First thin between 10 – 15 years (harvest 30 tons/acre at 8” dbh; dbh is “diameter in inches at breast height” measured 4.5 feet above ground);
 - ii. Second thin between 18 – 23 years (harvest 30 tons/acre at 11” dbh);
 - iii. Final harvest between 25 – 30 years (harvest 80 tons/acre at 14” dbh);
 - b. The ownership is approximately 60% small private landowners and 40% REITs, TIMOs, Industry and Large Landowners (defined as: REIT = Real Estate Investment Trust; TIMO = Timber Investment Management Organization; Industry are companies that own mills in addition to land; Large Landowners are individuals, families or partnerships that own over 2,000 acres). Government (federal, state, county and municipal) owned timberlands were not included in this study but typically comprise less than 10% of commercial timberlands.
- 2) Natural pine stands, 2.3 million acres (47%) in 50-mile radius, reach maturity in 40 - 50 years with average “Mean Annual Increment” (MAI) of 3.0 tons/acre/year of merchantable wood of which 70% is sawtimber (MAI 2.0 tons/acre/year), and the remainder of 30% is pulpwood (MAI 1.0 ton/acre/year):

- a. Natural stands are typically thinned 3 – 4 times and then final harvested:
 - i. First thin 18 – 23 years (harvest 35 tons/acre at 8” dbh);
 - ii. Second thin 25 – 30 years (harvest 20 tons/acre at 12” dbh);
 - iii. Third thin 33 – 40 years (harvest 20 tons/acre at 14” dbh);
 - iv. Fourth thin leaving seed trees 40 – 50 years (harvest 40 tons/acre at 16” dbh);
 1. the 10 – 20 seed trees/acre left for seeding the next forest are removed in 4 – 8 years yielding an additional 20 tons/acre at 18” dbh);
- b. The ownership is approximately 80% small private landowners and 20% REITs, TIMOs, Industry and Large Landowners.

It should be noted: 1) natural pine stands in addition to yielding low MAI have less than a 75% pine establishment target area coverage success; 2) each year natural pine stands are being converted to planted pine on an increasing level every year; and 3) natural pine in this report are not virgin pine as they have been rotated out and managed commercially for 2 or more thinning/rotations.

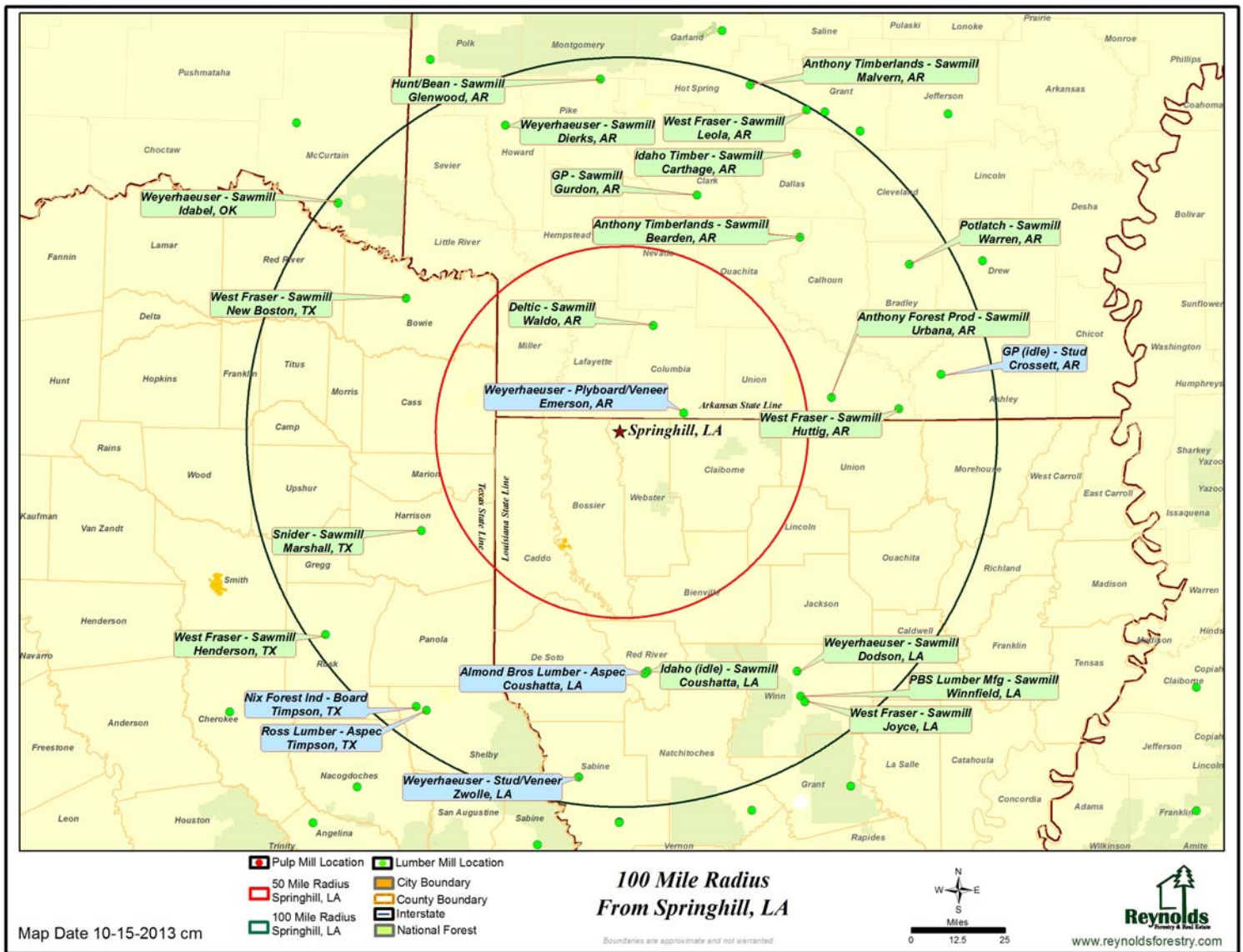
Competitive Consumption (Demand):

- 1) The mills utilizing pine sawlogs and their annual competitive consumption impact within a 100-mile drain on a 50-mile radius of Springhill is 2.5 million tons as charted below. This report is based on mill “capacity” because a mill’s production at any point in time could be lower than capacity unless there are upgrades beyond standard maintenance.

D1						D3	D4	D5	D6
Sawtimber Consuming Facility		Location	State	Status	Type	Annual Capacity	Competition within 100-miles		
#	Location Name						Distance	% Overlap in Subject's 50-Mile Radius	Annual Drain Impact
							Miles		US Short Tons
1	Weyerhaeuser	Emerson	LA	Operational	Veneer/Plywood	500,000	17	81%	404,795
2	Deltic Timber	Waldo	AR	Operational	Dimensional 2"	750,000	30	62%	465,551
3	Anthony Forest Products	Strong/Urbana	AR	Operational	Dimensional 2"	500,000	57	33%	166,910
4	Snider Industries	Marshall	TX	Operational	Board 1"	275,000	60	28%	76,982
5	Idaho Timber (Hood)	Coushatta	LA	Sold/reopen 2013	Demensional 2"	450,000	64	28%	125,970
6	Almond Bros Lumber	Coushatta	LA	Operational	Board 1"	149,500	65	23%	34,604
7	Georgia Pacific-Koch	Gurdon	AR	Operational	Dimensional 2"/Plywood	1,050,000	65	23%	243,037
8	West Fraser	New Boston	TX	Operational	Dimensional 2"	800,000	67	23%	185,171
9	Anthony Timberlands	Bearden	AR	Operational	Dimensional 2"	700,000	69	23%	162,025
10	West Fraser	Huttig	AR	2014 8.5m to 1m	Dimensional 2"	1,000,000	74	18%	182,995
11	Weyerhaeuser	Dodson	LA	Operational	Dimensional 2"	730,000	79	14%	103,902
12	Winn Forest Products (PBS)	Winnfield	LA	Operational	Dimensional 2"	780,000	85	7%	54,124
13	Weyerhaeuser	Dierks	AR	Operational	Dimensional 2"	900,000	86	7%	62,451
14	Idaho Timber	Carthage	AR	Operational	Dimensional 2"	210,000	86	7%	14,572
15	West Fraser	Joyce	LA	Operational	Dimensional 2"	780,000	87	7%	54,124
16	GeorgiaPacific- Koch	Crossett	AR	closed/idle	Plywood/stud	1,000,000	87	7%	69,390
17	Potlatch	Warren	AR	Operational	Dimensional 2"	700,000	88	7%	48,573
18	Ross Lumber	Timpson	TX	Operational	Board 1"	43,000	91	4%	1,596
19	Nix Forest Industries	Timpson	TX	Operational	Board 1"	800,000	92	4%	29,689
20	Weyerhaeuser	Zwolle	LA	Operational	Veneer/Stud	500,000	93	4%	18,556
21	Hunt Bean (Bean)	Glenwood	AR	Re-opening	Dimensional 2"	500,000	95	2%	9,278
22	Weyerhaeuser	Idabel	OK	Operational	Dimensional 2"	625,000	96	2%	11,597
23	West Fraser Timber	Henderson	TX	Operational	Dimensional 2"	500,000	96	2%	9,278
24	Anthony Timberlands	Malvern	AR	Operational	Dimensional 2"	500,000	97	2%	9,278
25	West Fraser	Leola	AR	Operational	Dimensional 2"	560,000	97	2%	10,391
						14,802,500	79	Consumption Facilities	2,554,839
									25

- 2) The information pertaining to facility consumption was obtained directly or indirectly from facility managers, government agencies, forestry associations, releases and compilations.

- 3) Facilities were evaluated up to 100-miles of Springhill, Louisiana to determine their percent overlap into the 50-mile Springhill supply radius considered economically optimal to reduce transport costs. Mills only transport beyond 50-miles when distant lower stumpage prices offset the higher transport cost; and during periods of wet weather when less roundwood is available nearby (see map below):



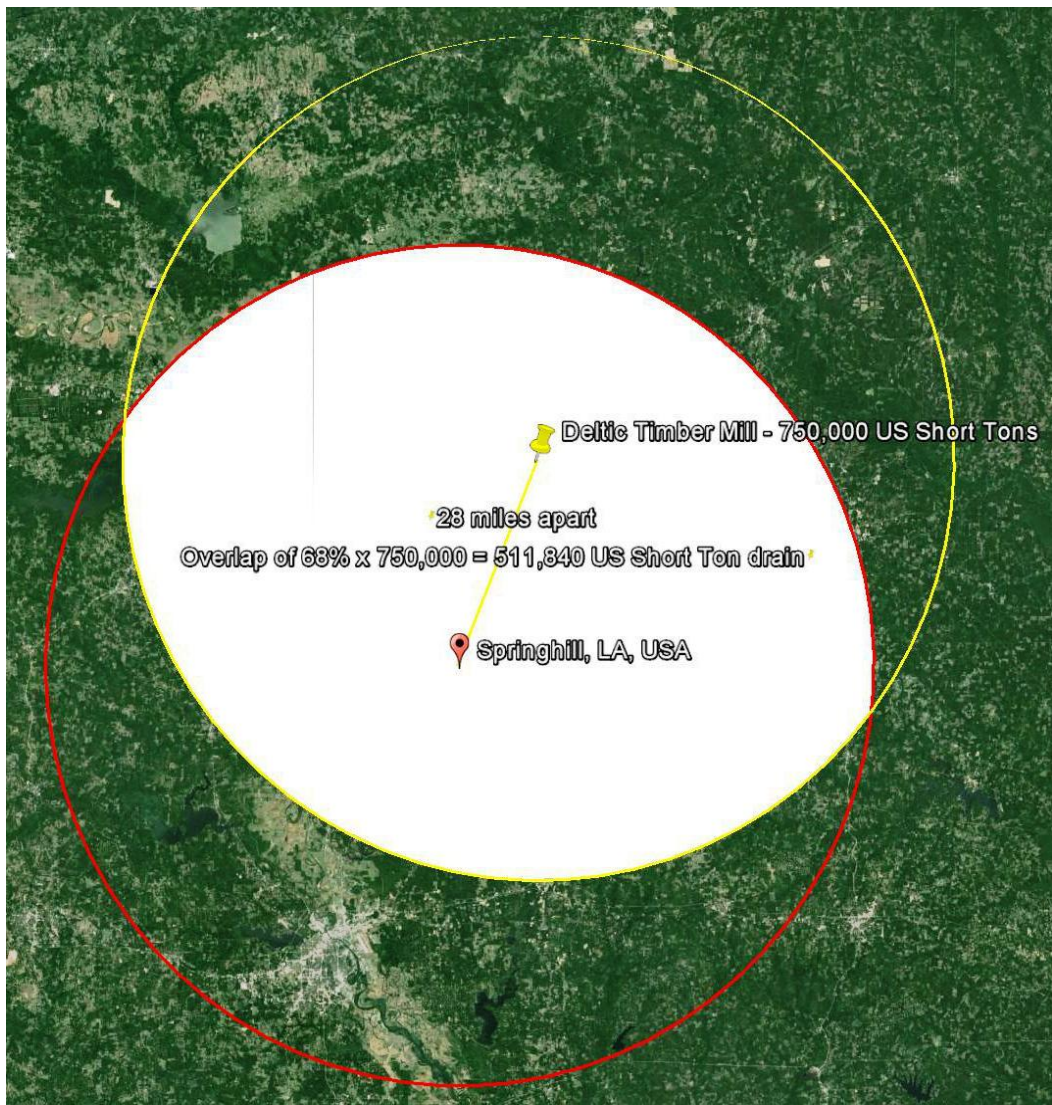
Blue = Plywood Mills; Green = Sawmills

- 4) Each mill's impact was calculated by determining the percent (%) area using Geographical Information Mapping System (GIS) for each competing mill's overlap with Springhill's 50-mile basin; for example, Deltic Timber facility annually consumes 750,00 tons of sawtimber roundwood and is 28 miles from Springhill which is a 68% (3,430,384 acre overlap divided by 5,026,548 acres in a 50-mile radius) area overlap with corresponding drain impact of 511,840 tons as illustrated in next three charts:

Mill Overlap Impact Drain Example	
Deltic Miles to Springhill	28
Overlap Acres	3,430,384
Percent Overlap	68%
Overlap Drain Impact	511,840

Mill Miles from Springhill	50-Mile Overlap with Springhill Drain Impact		Impact Drain Level	Deltic Annual Sawmill Capacity	Deltic Impact Drain on Springhill 50-Mile Radius
	Acres	Percent			
0	5,026,548	100.0%	High		
5	4,712,407	93.8%			
10	4,398,266	87.5%			
15	4,069,442	81.0%			
20	3,740,618	74.4%			
25	3,430,384	68.2%	Deltic	750,000	511,840
30	3,120,150	62.1%	Medium		
35	2,802,417	55.8%			
40	2,484,684	49.4%			
45	2,216,759	44.1%			
50	1,948,834	38.8%			
55	1,677,967	33.4%			
60	1,407,099	28.0%			
65	1,163,466	23.1%			
70	919,832	18.3%			
75	715,437	14.2%			
80	511,042	10.2%	Low		
85	348,792	6.9%			
90	186,542	3.7%			
95	93,271	1.9%			
100	-	0.0%			

* Acres calculated from GIS (miles rounded to highest impact)



Supply:

- 1) The total sustainable pine sawtimber that is available to be cut annually within a 50-mile radius of Springhill, Louisiana is 4.3 million tons obtained as follows:
 - i. Determined the pine sawtimber in two-inch average diameter classes by utilizing “Forest Inventory and Analysis” (FIA) data consisting of quarter (1/4) acre plots for every 6,000 acres of forest installed by Louisiana, Arkansas and Texas state field crews operating under the “United States Forestry Service” (USFS) federal guidelines. The FIA plot data was provided along with specialized querying programing by James Rosson, Jr. with FIA, Southern Research Station, United States Forest Service:

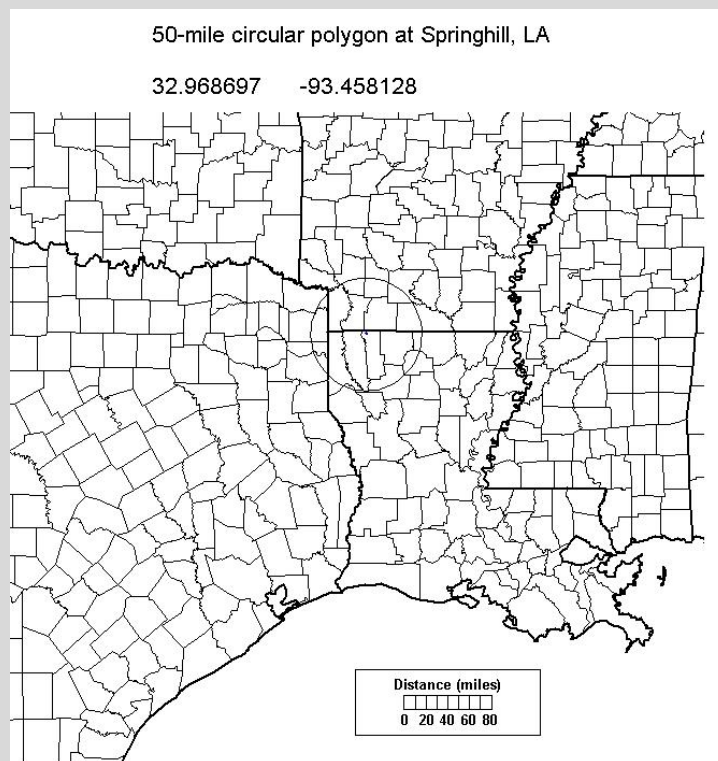
Date: March 20, 2013
To: Teddy Reynolds
From: James F. Rosson, Jr.
Subject: Sawlog volumes for Springhill, Louisiana

Attached are the 12 tables for a 50-mile radius circular polygon for a mill site centered near Springhill, Louisiana (see coordinates on attached map). Note: this data is for the sawlog portion of pine in the diameter range of ≥ 9.0 but < 22.0 inches dbh.

The estimates are derived from the inventory of Louisiana (dated 2011), Arkansas (dated 2012), and Texas (dated 2011). Please refer to the attached map for proportions of the polygon in each respective state. As we have discussed, there are still data issues with the previous cycle of Louisiana data but three new panels into the new cycle (cycle 8) have been collected. This lessens the impact to only the two older panels from the previous survey cycle. Therefore, the overall net effect of past problematic Louisiana data is lessened.

The number of sample plots used to derive each table is as follows.

Tables:	1B, 13B	610 forest plots
	2B, 14B	98
	3B, 15B	514
	4B, 16B	198
	5B, 17B	53
	6B, 18B	145



Tables 1B – 6B below were provided by Jim Rosson, with USFS, and converted to Excel tables for this report:

TABLE 1B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE				
Springhill, LA				
PINE SAWLOG VOLUME INCLUDES TREES >=9.0 AND <22.0 INCHES IN DBH. THIS TABLE INCLUDES NIPF AND FOREST INDUSTRY LANDS, BOTH NATURAL AND PLANTATIONS . 3-13-2013				
FIA DATA				
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME
class	acres	%	million cf	%
1	845.2	25%	5.8	0%
2	896.8	27%	239.7	13%
3	783.1	24%	629.3	35%
4	482.7	15%	634.7	36%
5	236.4	7%	247.4	14%
6	45.1	1%	12.1	1%
7	16.3	0%	16.7	1%
8	5.9	0%	0	0%
9	11.9	0%	0	0%
10	3323.4	100%	1785.7	100%

* cf = cubic feet

TABLE 2B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE						
Springhill, LA						
PINE SAWLOG VOLUME INCLUDES TREES >=9.0 AND <22.0 INCHES IN DBH. THIS TABLE INCLUDES FOREST INDUSTRY LANDS, BOTH NATURAL AND PLANTATIONS . 3-13-2013						
FIA DATA					RFC CALCULATION	
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME	PLANTATION	NATURAL
class	acres	%	million cf	%	milion cf	million cf
1	120.8	22%	0.4	0%	0.4	-
2	151.4	28%	44.4	13%	29.5	14.9
3	150.3	28%	159	47%	66.5	92.5
4	55.6	10%	79.3	23%	3.3	76.0
5	47.6	9%	55.9	16%	-	55.9
6	11.9	2%	0.6	0%	-	0.6
7	0.0	0%	0.0	0%	-	-
8	0.0	0%	0.0	0%	-	-
9	5.5	1%	0.0	0%	-	-
19	543.1	100%	339.6	100%	99.7	239.9

TABLE 3B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE						
Springhill, LA						
PINE SAWLOG VOLUME INCLUDES TREES >=9.0 AND <22.0 INCHES IN DBH. THIS TABLE INCLUDES NIPF LANDS, BOTH NATURAL AND PLANTATION . 3-13-2013						
FIA DATA					RFC CALCULATION	
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME	PLANTATION	NATURAL
class	acres	%	million cf	%	milion cf	million cf
1	724.3	26%	5.4	0%	1.2	4.2
2	745.4	27%	195.3	14%	78.0	117.3
3	632.8	23%	470.3	33%	133.2	337.1
4	427.1	15%	555.5	38%	137.0	418.5
5	188.8	7%	191.4	13%	25.8	165.6
6	33.2	1%	11.6	1%	5.3	6.3
7	16.3	1%	16.7	1%	-	16.7
8	5.9	0%	0.0	0%	-	-
9	6.4	0%	0.0	0%	-	-
10	2780.2	100%	1446.2	100%	380.5	1,065.7

TABLE 4B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE
Springhill, LA

PINE SAWLOG VOLUME INCLUDES TREES ≥ 9.0 AND < 22.0 INCHES IN DBH. THIS TABLE INCLUDES BOTH **NIPF AND FOREST INDUSTRY LANDS, ON PLANTATIONS**. 3-13-2013

FIA DATA				
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME
class	acres	%	million cf	%
1	453.5	47%	1.6	0%
2	293.1	30%	107.5	22%
3	134.9	14%	199.7	42%
4	60.4	6%	140.3	29%
5	13.5	1%	25.8	5%
6	6.7	1%	5.3	1%
7	0.0	0%	0.0	0%
8	0.0	0%	0.0	0%
9	5.5	1%	0.0	0%
10	967.6	100%	480.2	100%

TABLE 5B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE
Springhill, LA

PINE SAWLOG VOLUME INCLUDES TREES ≥ 9.0 AND < 22.0 INCHES IN DBH. THIS TABLE INCLUDES **FOREST INDUSTRY LANDS, ON PLANTATIONS**. 3-13-2013

FIA DATA				
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME
class	acres	%	million cf	%
1	99.9	38%	0.4	0%
2	109.8	42%	29.5	30%
3	43.8	17%	66.5	67%
4	1.5	1%	3.3	3%
5	0	0%	0	0%
6	0	0%	0	0%
7	0	0%	0	0%
8	0	0%	0	0%
9	5.5	2%	0	0%
10	260.5	100%	99.7	100%

TABLE 6B. EFFECTIVE DENSITY OF LOBLOLLY, SHORTLEAF, SLASH, AND LONGLEAF PINE IN 50-MILE CIRCULAR POLYGON CENTERED ON MILL SITE
Springhill, LA

PINE SAWLOG VOLUME INCLUDES TREES ≥ 9.0 AND < 22.0 INCHES IN DBH. THIS TABLE INCLUDES **NIPF LANDS, ON PLANTATIONS**. 3-13-2013

FIA DATA				
QUAD MEAN CLASS	THOUSAND ACRES	PERCENT AREA	VOLUME MILLION CUFT	PERCENT VOLUME
class	acres	%	million cf	%
1	353.6	50%	1.2	0%
2	183.3	26%	78	20%
3	91.1	13%	133.2	35%
4	58.9	8%	137	36%
5	13.5	2%	25.8	7%
6	6.7	1%	5.3	1%
7	0.0	0%	0.0	0%
8	0.0	0%	0.0	0%
9	0.0	0%	0.0	0%
10	707.1	100%	380.5	100%

- ii. There are currently **60.2 million** tons of standing pine sawtimber within 50-mile radius of Springhill per USFS FIA data. Sawtimber data (trees greater than 9.0" dbh and less than 22.0" dbh) were reported by stands in two inch average dbh classes; for example: the 12" class (11.0" - 12.9") only represents sawtimber volumes above 9.0" dbh:

Diameter Classes by Dbh		FIA Sawlog Data			Total Sawlogs
		volumes for sawtimber trees ≥9.0" dbh			
S1		S2			S3
US dbh Inches		US Cubic Feet (million)	US Cubic Feet	Percent	US Tons
6	5.0-6.9	5.8	5,800,000	0%	195,460
8	7.0-8.9	239.7	239,700,000	13%	8,077,890
10	9.0-10.9	629.3	629,300,000	35%	21,207,410
12	11.0-12.9	634.8	634,800,000	36%	21,392,760
14	13.0-14.9	247.3	247,300,000	14%	8,334,010
16	15.0-16.9	12.2	12,200,000	1%	411,140
18	17.0-18.9	16.7	16,700,000	1%	551,100
20	19.0-20.9	0.0	-	0%	-
>21	21.0-22.0	0.0	-	0%	-
		1785.8	1,785,800,000	100%	60,169,770

The FIA volumes are reported in million cubic feet and converted to tons by first converting to cunits by dividing cubic feet by 100 (100 cubic feet = 1 cunit), and then converted to tons by multiplying the pine cunits by the ton conversion factor of 3.37 tons/cunit for pine trees less than 18" dbh and 3.30 tons/cunit for pine trees equal or greater than 18" dbh (refer to S1, S2, S3 above).

- iii. "Annual Sawlogs Available for Harvest" (S5) each year was determined for each dbh class as illustrated below (S4, S5) at **11.2 million** tons. From this number the "Sustained Annual Sawlog Harvest" (S7) was determined at **4.3 million** tons (S6, S7).

Annual Sawlogs Available for Harvest		Sustained Annual Sawlog Harvest	
S4	S5	S6	S7
Percent	US Tons	Percent	US Tons
18%	35,385	90%	31,847
19%	1,526,475	36%	542,004
19%	3,951,932	28%	1,122,581
18%	3,945,259	40%	1,569,965
18%	1,517,511	62%	936,590
19%	77,577	75%	57,876
18%	99,198	80%	79,358
-	-	-	-
-	-	-	-
11,153,337		4,340,221	

The percents (%) for "Annual Sawlogs Available for Harvest" (S4) were determined as below:

Stand Type	Stand Category	Dbh Class								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0 - 22.0
Planted	Previous Harvest	0%	0%	20%	20%	20%	20%	20%	20%	20%
	Annual Harvest	0%	20%	20%	20%	20%	20%	20%	20%	20%
	Future Cut	95%	75%	55.0%	55.0%	55.0%	55%	55%	55%	55%
	Never Harvested	5%	5%	5%	5%	5%	5%	5%	5%	5%
Natural	Previous Harvest	0%	25%	18%	18%	18%	18%	18%	18%	18%
	Annual Harvest	25%	18%	18%	18%	18%	18%	18%	18%	18%
	Future Cut	65%	47%	54%	54%	54%	54%	54%	54%	54%
	Never Harvested	10%	10%	10%	10%	10%	10%	10%	10%	10%

		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0 - 22.0
Planted	Inches in Class	2	2	2	2	2	2	2	2	2
	Growth Rate	0.48	0.45	0.40	0.39	0.38	0.37	0.36	0.35	0.30
	Years in Class	4.2	4.4	5.1	5.1	5.3	5.4	5.6	5.7	6.7
Natural	Inches in Class	2	2	2	2	2	2	2	2	2
	Growth Rate	0.30	0.38	0.36	0.35	0.34	0.32	0.30	0.28	0.25
	Years in Class	6.7	5.3	5.6	5.7	5.9	6.3	6.7	7.1	8.0

* 6" dbh class starts with lower growth of 0.30" because represents older seed trees

The percents (%) for “Sustained Annual Sawlog Harvest” (S6) were determined as below:

Dbh Class (inches)	Forest Industry Lands		Non Industrial Lands	
	Plantation	Natural	Plantation	Natural
5.0-6.9	0%	90%	0%	90%
7.0-8.9	25%	45%	25%	45%
9.0-10.9	35%	25%	35%	25%
11.0-12.9	55%	35%	55%	35%
13.0-14.9	75%	60%	75%	60%
15.0-16.9	80%	70%	80%	70%
17.0-18.9	90%	80%	90%	80%
19.0-20.9	95%	90%	95%	90%
21.0-22.0	95%	90%	95%	90%

- iv. The Competitive Available Annual Supply (R3) of 1.7 million tons was determined by subtracting the “Competitively Annually Consumed Tons” (D6) of 2.5 million tons from The “Sustained Annual Sawlog Harvest” (S7) of 4.3 million tons. The “Annual Growth Drain Ratio” (R2) of 1.7 growth to drain ratio was calculated by dividing the “Sustained Annual Sawlog Harvest” (S7) by the “Competitively Annually Consumed Tons” (D6) as shown below:

2013 Sawtimber Summary		
Description	Amount	Reference
Total Sawlogs Tons (S3)	60,200,000	S3 = S17 + S31 + S45 + S59
Annual Sawlogs Available for Harvest (S5)	11,200,000	S5 = S19 + S33 + S47 + S61
Sustained Annual Sawlog Harvest (S7)	4,300,000	S7 = S21 + S35 + S49 + S63
Net Annual Growth; set to zero (R1)	0.00%	R1
Total Tons after Removal with Growth (S14)	60,200,000	S14 = S28 + S42 + S56 + S70
Annual Growth Drain Ratio (R2)	1.7	R2 = S7 / D6
Competitively Annually Consumed Tons by Other Mills (D6)	2,600,000	D6
Competitive Available Annual Supply Balance (R3)	1,700,000	R3 = S7 - D6

*References: S = Supply; D = Demand; R = Results

2) Determined annual growth of pine sawtimber roundwood (sawlogs) to analyze the sustainability of supply in the following steps:

A) 25.1 million tons of sawtimber trees were calculated in “Moving to Next Dbh Class” (S10) by multiplying the “Tons After Harvest” (S8) by “Percent Moving to Next Dbh Class” (S9) as below:

Tons After Harvest	Percent Moving to Next Dbh Class	Moving to Next Dbh Class
S8	S9	S10
US Tons	Percent	US Tons
163,614	58%	95,049
7,535,886	49%	3,661,855
20,084,829	46%	9,226,451
19,822,795	44%	8,768,547
7,397,420	41%	3,051,312
353,264	33%	116,527
471,742	27%	128,215
-		-
-		-
55,829,549		25,047,956

The ton percents for the “Percent Moving to Next Dbh Class” (S9) were determined as follows:

Planted							Natural						
Dbh (inches)			Trees				Dbh (inches)			Trees			
Class	Start	Growth	End	Staying	Moving	% Moving	Class	Start	Growth	End	Staying	Moving	% Moving
5.0-6.9	5.00	0.48	5.5	5.0%		67%	5.0-6.9	5.00	0.30	5.3	5.0%		53.6%
	5.48	0.48	6.0	7.1%				5.30	0.30	5.6	7.1%		
	5.96	0.48	6.4	9.3%				5.60	0.30	5.9	9.3%		
	6.44	0.48	6.9	11.4%				5.90	0.30	6.2	11.4%		
	6.92	0.48	7.4		13.6%			6.20	0.30	6.5	13.6%		
	7.40	0.48	7.9		15.7%			6.50	0.30	6.8		15.7%	
	7.88	0.48	8.4		17.9%			6.80	0.30	7.1		17.9%	
8.36	0.48	8.8		20.0%	7.10	0.30	7.4		20.0%				
7.0-8.9	7.00	0.45	7.5	10.1%		56%	7.0-8.9	7.00	0.38	7.4	10.1%		42.7%
	7.45	0.45	7.9	10.8%				7.38	0.38	7.8	10.8%		
	7.90	0.45	8.4	11.5%				7.76	0.38	8.1	11.5%		
	8.35	0.45	8.8	12.2%				8.14	0.38	8.5	12.2%		
	8.80	0.45	9.3		12.8%			8.52	0.38	8.9	12.8%		
	9.25	0.45	9.7		13.5%			8.90	0.38	9.3		13.5%	
	9.70	0.45	10.2		14.2%			9.28	0.38	9.7		14.2%	
10.15	0.45	10.6		14.9%	9.66	0.38	10.0		14.9%				
9.0-10.9	9.00	0.40	9.4	10.4%		54.7%	9.0-10.9	9.00	0.36	9.4	10.4%		41.9%
	9.40	0.40	9.8	11.0%				9.36	0.36	9.7	11.0%		
	9.79	0.40	10.2	11.6%				9.72	0.36	10.1	11.6%		
	10.19	0.40	10.6	12.2%				10.08	0.36	10.4	12.2%		
	10.58	0.40	11.0		12.8%			10.44	0.36	10.8	12.8%		
	10.98	0.40	11.4		13.4%			10.80	0.36	11.2		13.4%	
	11.37	0.40	11.8		14.0%			11.16	0.36	11.5		14.0%	
11.77	0.40	12.2		14.6%	11.52	0.36	11.9		14.6%				
11.0-12.9	11.00	0.39	11.4	10.6%		54.3%	11.0-12.9	11.00	0.35	11.4	10.6%		41.5%
	11.39	0.39	11.8	11.2%				11.35	0.35	11.7	11.2%		
	11.78	0.39	12.2	11.7%				11.70	0.35	12.1	11.7%		
	12.17	0.39	12.6	12.2%				12.05	0.35	12.4	12.2%		
	12.56	0.39	13.0		12.8%			12.40	0.35	12.8	12.8%		
	12.95	0.39	13.3		13.3%			12.75	0.35	13.1		13.3%	
	13.34	0.39	13.7		13.8%			13.10	0.35	13.5		13.8%	
13.73	0.39	14.1		14.4%	13.45	0.35	13.8		14.4%				
13.0-14.9	13.00	0.38	13.4	10.8%		41.2%	13.0-14.9	13.00	0.34	13.3	10.8%		41.2%
	13.38	0.38	13.8	11.3%				13.34	0.34	13.7	11.3%		
	13.76	0.38	14.1	11.8%				13.68	0.34	14.0	11.8%		
	14.14	0.38	14.5	12.3%				14.02	0.34	14.4	12.3%		
	14.52	0.38	14.9	12.7%				14.36	0.34	14.7	12.7%		
	14.90	0.38	15.3		13.2%			14.70	0.34	15.0		13.2%	
	15.28	0.38	15.7		13.7%			15.04	0.34	15.4		13.7%	
15.66	0.38	16.0		14.2%	15.38	0.34	15.7		14.2%				

15.0-16.9	15.00	0.37	15.4	11.1%	40.5%	15.0-16.9	15.00	0.32	15.3	11.1%	27.4%
	15.37	0.37	15.7	11.5%			15.32	0.32	15.6	11.5%	
	15.74	0.37	16.1	11.9%			15.64	0.32	16.0	11.9%	
	16.11	0.37	16.5	12.3%			15.96	0.32	16.3	12.3%	
	16.48	0.37	16.9	12.7%			16.28	0.32	16.6	12.7%	
	16.85	0.37	17.2				16.60	0.32	16.9	13.1%	
	17.22	0.37	17.6	13.5%			16.92	0.32	17.2	13.5%	
	17.59	0.37	18.0	13.9%			17.24	0.32	17.6	13.9%	
17.0-18.9	17.00	0.36	17.4	11.2%	40.2%	17.0-18.9	17.00	0.30	17.3	11.2%	27.2%
	17.36	0.36	17.7	11.6%			17.30	0.30	17.6	11.6%	
	17.72	0.36	18.1	12.0%			17.60	0.30	17.9	12.0%	
	18.08	0.36	18.4	12.3%			17.90	0.30	18.2	12.3%	
	18.44	0.36	18.8	12.7%			18.20	0.30	18.5	12.7%	
	18.80	0.36	19.2	13.0%			18.50	0.30	18.8	13.0%	
	19.16	0.36	19.5	13.4%			18.80	0.30	19.1	13.4%	
	19.52	0.36	19.9	13.8%			19.10	0.30	19.4	13.8%	
19.0-20.9	19.00	0.35	19.4	10.8%	41.1%	19.0-20.9	19.00	0.28	19.3	10.8%	27.9%
	19.35	0.35	19.7	11.3%			19.28	0.28	19.6	11.3%	
	19.70	0.35	20.1	11.8%			19.56	0.28	19.8	11.8%	
	20.05	0.35	20.4	12.3%			19.84	0.28	20.1	12.3%	
	20.40	0.35	20.8	12.7%			20.12	0.28	20.4	12.7%	
	20.75	0.35	21.1	13.2%			20.40	0.28	20.7	13.2%	
	21.10	0.35	21.5	13.7%			20.68	0.28	21.0	13.7%	
	21.45	0.35	21.8	14.2%			20.96	0.28	21.2	14.2%	

“Total Tons after Removal & Before Growth” (S11) was calculated at 55.9 million tons by subtracting tons in each class “Moving to Next Dbh Class” (S10) from “Tons After Harvest” (S8) and then adding from previous dbh class tons “Moving to Next Dbh Class” (S10) as charted:

Tons After Harvest	Moving to Next Dbh Class	Total Tons After Removal & Before Growth
S8	S10	S11
US Tons	US Tons	US Tons
163,614	95,049	163,614
7,535,886	3,661,855	3,969,080
20,084,829	9,226,451	14,520,234
19,822,795	8,768,547	20,280,699
7,397,420	3,051,312	13,114,654
353,264	116,527	3,288,049
471,742	128,215	460,054
-	-	128,215
-	-	-
55,829,549	25,047,956	55,924,598

B) The “Annual Growth Tons” (S13) inside each dbh class was determined to be 4.3 million tons by multiplying the “Growth Annual Percent” (S12) by “Total Sawlogs” (S3) as shown below:

Total Sawlogs	Growth Annual Percent	Growth Annual Tons
S3	S12	S13
US Tons	Percent	US Tons
195,460	7.9%	15,533
8,077,890	8.8%	709,445
21,207,410	7.7%	1,634,070
21,392,760	6.8%	1,460,425
8,334,010	4.8%	400,352
411,140	4.3%	17,857
551,100	3.4%	18,982
-	-	-
-	-	-
60,169,770		4,256,663

The “Growth Annual Percent” (S12) for the above calculations were determined as follows:

Planted							
DBH Class	Beginning		Dbh (inches)		Ending		Growth Percent (annual compounding)
	Average Dbh (inches)	Cubic Feet (CF) Volume	CF Growth Calculation	Growth % Calculation	Dbh (inches)	Cubic Feet (CF) Volume	
5.0-6.9	9.0	8.8	1.0	0.48	9.8	10.8	10.9%
7.0-8.9	9.0	8.9	1.0	0.45	9.9	10.8	9.6%
9.0-10.9	10.0	11.8	1.0	0.40	12.8	14.3	8.2%
11.0-12.9	12.0	20.5	1.0	0.39	21.5	24.4	7.4%
13.0-14.9	14.0	28.3	1.0	0.38	29.3	32.3	5.3%
15.0-16.9	16.0	41.7	1.0	0.37	42.7	47.0	4.7%
17.0-18.9	18.0	54.0	1.0	0.36	55.0	60.2	4.1%
19.0-20.9	20.0	73.3	1.0	0.35	74.3	80.8	3.6%
>= 21	22.0	88.3	1.0	0.30	89.3	96.5	2.8%

Natural							
DBH Class	Beginning		Dbh		Ending		Growth Percent (annual compounding)
	Average Dbh (inches)	Cubic Feet (CF) Volume	CF Growth Calculation	Growth % Calculation	Dbh (inches)	Cubic Feet (CF) Volume	
5.0-6.9	9.0	8.8	1.0	0.30	9.30	10.8	6.8%
7.0-8.9	9.0	8.9	1.0	0.38	9.38	10.8	8.1%
9.0-10.9	10.0	11.8	1.0	0.36	10.31	14.3	7.5%
11.0-12.9	12.0	20.5	1.0	0.35	12.30	24.4	6.7%
13.0-14.9	14.0	28.3	1.0	0.34	14.29	32.3	4.7%
15.0-16.9	16.0	41.7	1.0	0.32	16.27	47.0	4.1%
17.0-18.9	18.0	54.0	1.0	0.30	18.25	60.2	3.4%
19.0-20.9	20.0	73.3	1.0	0.28	20.23	80.8	2.9%
>= 21	22.0	88.3	1.0	0.25	22.20	96.5	2.3%

C) The “Total Tons After Removal with Growth” (S14) were determined to be **60.2 million** tons by adding the “Total Tons After Removal & Before Growth” (S11) to “Growth Annual Tons” (S13) as charted below. The removals were adjusted until the net growth was set to zero to provide a solitary number of sustained tons available for annual harvest by sawlog consuming mills, which was **4.3 million** tons (S7 “Sustained Annual Sawlog Harvest”). By subtracting the overlapping competitive consumption of **2.6 million** tons leaves a healthy sustained sawlog “Competitive Annual Supply Balance” (R3) of **1.7 million** tons.

Total Tons After Removal & Before Growth	Growth Annual Tons	Total Tons After Removal with Growth
S11	S13	S14
US Tons	US Tons	US Tons
163,614	15,533	179,146
3,969,080	709,445	4,678,525
14,520,234	1,634,070	16,154,303
20,280,699	1,460,425	21,741,124
13,114,654	400,352	13,515,005
3,288,049	17,857	3,305,905
460,054	18,982	479,036
128,215	-	128,215
-	-	-
55,924,598	4,256,663	60,181,260

Hypothetical Conditions: None.

Extraordinary Assumptions: None.

Physical Identification: 50-mile radius of Springhill, Louisiana, USA for sawlog stumpage supply study; and 100-mile radius of Springhill, Louisiana for competing sawlog utilizing mill overlap consumption study.

Intended User: North Webster Parish Industrial District (NWPID).

Intended Use: Determine potential for new mill consuming sawtimber stumpage.

Study Effective Date: November 19, 2013.

Certification: I further certify that, to the best of my knowledge and belief:

- a. The statements of fact contained in this report are true and correct to the best of my knowledge;
- b. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions stated and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions;
- c. I have no interest or bias in the property that is the subject of this report and no personal interest with respect to the parties involved;
- d. My engagement in this assignment was not contingent upon developing or reporting predetermined results;
- e. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this study.
- f. The following people also contributed to this study: 1) Joe Willet, Forester and Retired Procurement Manager for Deltic working for Reynolds Forestry; 2) Colleen Morphew, GIS Mapping Cartographer for Reynolds Forestry; 3) Jim Rosson, FIA Analyst for USFS; and Jon Eichstaedt, Editing for Reynolds Forestry.

Summary: In my professional assessment, based on the 50-mile FIA data provided by the USFS combined with existing competing consumption within 100 miles of Springhill, Louisiana, there is more than sufficient sustained sawlog stumpage (standing trees) and growth to support a new sawlog consuming facility with minimum impact on raw material supply and prices.

If you have any questions, or need additional supportive data, verification or explanation, please email or call.

Sincerely,

Teddy Reynolds
Reynolds Forestry Consulting and Real Estate, PLLC

Attachments 1, 2 & 3

Cc: Jim Rosson - USFS
Dennis Neilson – DANA
Joe Willett – RFC
Jon Eichstaedt – RFC
John Rankin - RFC
Colleen Morphew – RFC

Sawtimber Roundwood Supply - Attachment 3

All Pine Species - Planted and Natural

Springhill, LA - 50 Mile Radius

November 19, 2013

Prepared for: North Webster Parish Industrial District

www.reynoldsforestry.com

Pine Natural Stands - Industry Ownership

Diameter Classes by Dbh		FIA Sawlog Data			Total Sawlogs	Annual Sawlogs Available for Harvest		Sustained Annual Sawlog Harvest		Tons After Harvest	Percent Moving to Next Dbh Class	Moving to Next Dbh Class	Total Tons After Removal & Before Growth	Growth Annual Tons	Total Tons After Removal with Growth
		volumes for sawtimber trees ≥9.0" dbh				S46	S47	S48	S49						
S43		S44			S45	S46	S47	S48	S49	S50	S51	S52	S53	S55	S56
US dbh Inches		US Cubic Feet (million)	US Cubic Feet	Percent	US Tons	Percent	US Tons	Percent	US Tons	US Tons	Percent	US Tons	US Tons	US Tons	US Tons
6	5.0-6.9	0.0	-	0%	-	25%	-	90%	-	-	54%	-	-	-	-
8	7.0-8.9	14.9	14,900,000	6%	502,130	18%	90,383	45%	40,673	461,457	43%	197,155	264,302	40,735	305,037
10	9.0-10.9	92.5	92,500,000	39%	3,117,250	18%	561,105	25%	140,276	2,976,974	42%	1,248,833	1,925,296	233,001	2,158,297
12	11.0-12.9	76.0	76,000,000	32%	2,561,200	18%	461,016	35%	161,356	2,399,844	42%	996,516	2,652,161	170,538	2,822,700
14	13.0-14.9	55.9	55,900,000	23%	1,883,830	18%	339,089	60%	203,454	1,680,376	41%	693,127	1,983,765	89,399	2,073,164
16	15.0-16.9	0.6	600,000	0%	20,220	18%	3,640	70%	2,548	17,672	27%	4,846	705,954	822	706,776
18	17.0-18.9	0.0	-	0%	-	18%	-	80%	-	-	27%	-	4,846	-	4,846
20	19.0-20.9	0.0	-	0%	-	18%	-	90%	-	-	28%	-	-	-	-
>21	21.0-22.0	0.0	-	0%	-	18%	-	90%	-	-	0%	-	-	-	-
		239.9	239,900,000	100%	8,084,630		1,455,233		548,306	7,536,324		3,140,477	7,536,324	534,495	8,070,820
					Contribution	13%									

Pine Natural Stands - Non-Industry Ownership

Diameter Classes by Dbh		FIA Sawlog Data			Total Sawlogs	Annual Sawlogs Available for Harvest		Sustained Annual Sawlog Harvest		Tons After Harvest	Percent Moving to Next Dbh Class	Moving to Next Dbh Class	Total Tons After Removal & Before Growth	Growth Annual Tons	Total Tons After Removal with Growth
		volumes for sawtimber trees ≥9.0" dbh				S60	S61	S62	S63						
S57		S58			S59	S60	S61	S62	S63	S64	S65	S66	S67	S69	S70
US dbh Inches		US Cubic Feet (million)	US Cubic Feet	Percent	US Tons	Percent	US Tons	Percent	US Tons	US Tons	Percent	US Tons	US Tons	US Tons	US Tons
8	7.0-8.9	4.2	4,200,000	0%	141,540	25%	35,385	90%	31,847	109,694	54%	58,818	109,694	9,650	119,344
10	9.0-10.9	117.3	117,300,000	11%	3,953,010	18%	711,542	45%	320,194	3,632,816	43%	1,552,101	2,139,533	320,682	2,460,215
12	11.0-12.9	337.1	337,100,000	32%	11,360,270	18%	2,044,849	25%	511,212	10,849,058	42%	4,551,152	7,850,007	849,132	8,699,139
14	13.0-14.9	418.5	418,500,000	39%	14,103,450	18%	2,538,621	35%	888,517	13,214,933	42%	5,487,394	12,278,691	939,083	13,217,774
16	15.0-16.9	165.6	165,600,000	16%	5,580,720	18%	1,004,530	60%	602,718	4,978,002	41%	2,053,343	8,412,053	264,838	8,676,891
18	17.0-18.9	6.3	6,300,000	1%	212,310	18%	38,216	70%	26,751	185,559	27%	50,881	2,188,021	8,635	2,196,656
20	19.0-20.9	16.7	16,700,000	2%	551,100	18%	99,198	80%	79,358	471,742	27%	128,215	394,407	18,982	413,390
>21	21.0-22.0	0	-	0%	-	18%	-	90%	-	-	28%	-	128,215	-	128,215
0	0	0	-	0%	-	18%	-	90%	-	-	0%	-	-	-	-
		1065.7	1,065,700,000	100%	35,902,400		6,472,340		2,460,597	33,441,803		13,881,903	33,500,621	2,411,003	35,911,624
					Contribution	60%									