MODIFICATION REQUEST
FOR COARSE REFUSE DISPOSAL FACILITY
COVER MATERIAL FOR
ROCK DUMPS NO. 1, NO. 2, NO. 3 & NO. 4

MINE NO. 3, P-3257, R-20

JIM WALTER RESOURCES, INC.

TO

MR. STEVEN MILES, ENGINEER

ALABAMA SURFACE MINING COMMISSION

May 6, 2015

BY

MCGEHEE ENGINEERING CORP.
P. O. Box 3431
450 19th Street West
Jasper, Alabama 35502-3431
Telephone (205) 221-0686
Email: staff's first name@mcgehee.org

INTRODUCTION

Jim Walter Resources, Inc. (JWR) requests a modification to use two (2) feet of the best available soil material over graded coarse refuse in lieu of four (4) feet of cover material within its No. 3 Mine Complex pursuant to Section 880-X-lOD-.36(3)(e) of permanent program regulations associated with Alabama Act No. 81-435.

Consequently, Jim Walter Resources, Inc. respectfully requests that, after review of this proposal, the Alabama Surface Mining Reclamation Commission approve the modification to use less than four (4) feet of cover material over regraded coarse refuse in this area. This report is written to support the use of two (2) feet of the best available nontoxic noncombustible material over coarse refuse disposal facilities as the vegetation growth medium at Jim Walter Resources, Inc. No. 3 Mine, P-3257, Jefferson County, Alabama. All of the rock dumps with the exception of the northwestern half of Rock Dump No. 2 have been reclaimed in excess of 8 years. The northwestern half of Rock Dump No. 2 was covered and revegetated in the Spring of 2013. Findings supporting JWR's request are included in the following pages. The following paragraphs give a brief summary of the current conditions for Rock Dumps No. 1, No. 2, No. 3 and No. 4.

1. Rock Dump No. 1 was reclaimed and covered in 2006 and was revegetated in 2007. It has good vegetation and has several healthy volunteer pines growing on it. There is no evidence of erosion or poor performance of the vegetative cover.
2. Rock Dump No. 2 - The southeastern half of Rock Dump No. 2 was covered and revegetated in 2010. Vegetation success is good with more than adequate coverage. Pine trees were mechanically planted with moderate success. Surviving trees have good growth. The northwestern half of Rock Dump No. 2 was covered and seeded in the spring of 2013. Vegetation is established but not thriving yet. The northwestern half of Rock Dump No. 2 was also mechanically planted with pine trees with a good success rate. Some erosion has occurred where the vegetation is not well established.
3. Rock Dumps No. 3 & 4 were covered in 2002 and revegetated in fall of 2004. The vegetation on both of the rock dumps is well established and very lush in some areas. There is no evidence of erosion. Or poor performance of the vegetative cover.

4. Coarse refuse produced from the JWR's No. 3 Mine has historically shown in the past to be non-acid forming. Refuse is potentially acid forming or toxic forming when it has a pH of 4 or less or has a net potential acidity of less than 5 tons per 1000 tons of CaCO3 equivalent (equates to an acid-base account of less than negative 5). One sample of the coarse refuse was submitted to ASMC in Revision R-12 when Rock Dump 4 was modified and expanded in 1996. The sample were analyzed by PERC engineering and showed an acid-base account of 5.75 Four additional samples (one from each rock dump) of the coarse refuse were taken by removing the cover material down to the top of the coarse refuse. The acid-base accounts of the new samples are as follows:

RD #	**Paste pH**	**N.P.**	**% Sul**	**ABA**
1	5.61	4.4	0.085	+1.7
2	6.25	4.9	0.088	+2.1
3	6.77	14.6	0.269	+6.2
4	7.04	24.3	0.153	+19.5
Avg.	**6.42**	**12.05**	**0.149**	**+7.4**

5. All of the rock dumps were covered with a combination of existing on-site soils and soil material trucked in from off-site. Some of the off-site material contained limestone to provide neutralization of any acid forming material. A total of 16 samples of the existing cover material were taken on the four rock dumps. The samples were evenly spaced out with at least one sample per 10 acres. The cover material thickness average 2.44 feet and ranges between 2.0 feet and 4.0 feet in thickness.
6. The depth of root growth was measured in all of 16 sample locations and averaged 0.74 feet and ranged from 0.60 feet to 1.0 feet. All of the vegetation is well established and quite lush in some areas.

HISTORICAL LAND USE

The existing land use shown for the 629 acres of original permit was 145 acres of industrial use and 484 acres of forest. The last time the land use was addressed in the ASMC permit was Revision R-15 back in 2004 and the total permitted acreage was 745 acres. The post mining land use showed 546 acres of forest, 8 acres of undeveloped/no current use and 191 acres of industrial use. Use has been dictated by topography, which varies from steep to extremely steep, remoteness and ownership. Previous surface and underground mining, gas well exploration, and logging operations has extensively disturbed most of the area.

PROPOSED POST MINING LAND USE

The total permitted acreage after Revision R-20 will be 724 acres and will consist of 561 acres of undeveloped/no current use, 91 acres of forest, 51 acres of industrial use and 21 acres of permanent water impoundments (fish & wildlife). The post mining land use of the rock dumps is proposed to be undeveloped/no current use.

EFFECT OF LEACHATE AND SURFACE-WATER RUNOFF

Coarse Refuse

Refuse (coal processing waste) and cover material (soil) is considered potentially acid forming or toxic forming when it has a pH of 4 or less or has a net potential acidity of less than 5 tons per 1000 tons of $CaCO3$ equivalent (equates to an acid-base account of less than negative 5). The coarse refuse samples taken on Rock Dumps 1, 2 & 4 had acid-base accounts greater than -5.0 and are not acid forming. All of the samples had positive acid-base accounts.

Cover Material

All of the rock dumps were covered with a combination of existing on-site soils and soil material trucked in from off-site. Some of the off-site material contained limestone to provide neutralization of any acid forming material. A total of 16 samples of the existing cover material were taken on the four rock dumps. The samples were evenly spaced out with at least one sample per 10 acres. The cover material thickness averaged 2.44 feet and ranges between 2.0 feet and 4.0 feet in thickness. The average ABA of all of the cover material samples is +1.57 and indicates additional “neutralization

lime" is not required. Samples have been sent to the Auburn University Department of Agronomy and Soils to analyze available nutrients, water availability capacity and recommendations for addition of soil amendments but have not been received yet. Based on the success of the vegetation and the acid-base accounts of the cover material soil amendments or lime applications are not needed.

MINIMUM DEPTH OF ROOTING MEDIUM

In determining the adequacy of the proposed twenty-four (24) inch minimum depth of rooting medium, the following is submitted:

1. In order to restore land use capability, the post mining rooting depth should be equivalent to that of the soils present prior to the placement of refuse material. This is the depth to a root restricting layer and generally includes the A+B horizons.
2. Refuse is potentially acid forming or toxic forming when it has a pH of 4 or less or has a net potential acidity of less than 5 tons per 1000 tons of CaCO3 equivalent (equates to an acid-base account of less than negative 5). The samples taken of the refuse that has been placed in the rock dumps indicates that the refuse is not acid forming.
3. All of the thickness samples of the existing cover material were equal or greater than 24 inches. The average cover material thickness of the 16 sample points was just over 29 inches.
4. The rooting depth of the existing vegetation was measured on all 16 sample locations and ranged from a low of 7.2 inches to a maximum of 12 inches. The average rooting depth was 8.9 inches which is greater than the "A" horizon of both the Palmerdale soil and the Montevallo-Nauvoo association soils.
5. The top 24 inches of cover material was sampled in 6 inch increments to determine if there was any upward migration of acid from the covered coarse refuse. There was little or no change in the pH or the acid-base accounts from the top to bottom. The following chart gives the phase pH, neutralization potential, percent sulfur and acid-base account in 6 inch increments for all of the 16 samples of cover material taken on the four rock dumps.

See attached Sample Location Map for sample location with cover material depth and root growth depth.

Jim Walter Resources, Inc. Mine No. 3 P-3257 - Results of Rock Dump Cover Material Samples

	Paste pH				Neutralization Potential				Percent Sulfur				Acid-base Account			
Sample ID	"A" 0-0.5 Depth	"B" 0.5-1.0 Depth	"C" 1.0-1.5 Depth	"D" 1.5-2.0 Depth	"A" 0-0.5 Depth	"B" 0.5-1.0 Depth	"C" 1.0-1.5 Depth	"D" 1.5-2.0 Depth	"A" 0-0.5 Depth	"B" 0.5-1.0 Depth	"C" 1.0-1.5 Depth	"D" 1.5-2.0 Depth	"A" 0-0.5 Depth	"B" 0.5-1.0 Depth	"C" 1.0-1.5 Depth	"D" 1.5-2.0 Depth
1-1	5.05	4.82	4.73	4.90	0.00	3.30	1.90	2.40	0.157	0.090	0.202	0.098	-4.91	0.49	-4.41	-0.66
2-1	4.99	5.12	4.98	4.87	1.90	2.40	2.40	3.80	0.050	0.037	0.049	0.050	0.34	1.24	0.87	2.24
2-2	4.15	4.31	4.18	4.16	-0.50	-2.40	-0.50	0.50	0.035	0.034	0.037	0.048	-1.59	-3.46	-1.66	-1.00
2-3	3.82	3.77	3.69	3.64	0.80	-2.50	0.00	-0.80	0.031	0.024	0.039	0.029	-0.17	-3.25	-1.22	-1.71
2-4	3.86	4.31	5.51	5.37	-0.30	-2.00	2.00	-1.50	0.055	0.041	0.065	0.037	-2.02	-3.28	-0.03	-2.66
2-5	4.15	4.12	4.10	4.06	-2.90	-1.50	-3.90	-2.90	0.019	0.018	0.021	0.013	-3.49	-2.06	-4.56	-3.31
2-6	5.17	4.68	4.71	4.78	0.50	2.00	0.50	0.50	0.006	0.042	0.016	0.008	0.31	0.69	0.00	0.25
Avg RD2	**4.36**	**4.39**	**4.53**	**4.48**	**-0.08**	**-0.67**	**0.08**	**-0.07**	**0.033**	**0.033**	**0.038**	**0.031**	**-1.10**	**-1.69**	**-1.10**	**-1.03**
3-1	*6.92*	*7.16*	*7.12*	*7.43*	*216.00*	*199.00*	*186.90*	*301.00*	*0.024*	*0.003*	*0.004*	*0.009*	*215.25*	*198.91*	*186.78*	*300.72*
3-2	*7.17*	*7.29*	*7.28*	*7.30*	*252.40*	*160.20*	*162.60*	*121.40*	*0.005*	*0.011*	*0.015*	*0.015*	*252.24*	*159.86*	*162.13*	*120.93*
3-3	*7.07*	*6.96*	*7.08*	*7.05*	*252.40*	*211.20*	*308.80*	*370.10*	*0.000*	*0.004*	*0.008*	*0.001*	*252.40*	*211.08*	*308.55*	*370.07*
3-4	6.55	6.81	6.70	6.86	40.50	49.50	55.50	67.50	0.003	0.005	0.004	0.002	40.41	49.34	55.38	67.44
Avg RD3	**6.93**	**7.06**	**7.05**	**7.16**	**190.33**	**154.98**	**178.45**	**215.00**	**0.008**	**0.006**	**0.008**	**0.007**	**190.08**	**154.80**	**178.21**	**214.79**
4-1	*6.93*	*7.21*	*7.77*	*7.82*	*279.40*	*105.40*	*404.40*	*303.90*	*0.010*	*0.007*	*0.007*	*0.009*	*279.09*	*105.18*	*404.18*	*303.62*
4-2	5.70	4.73	4.43	4.26	22.00	1.50	1.50	1.50	0.074	0.067	0.068	0.070	19.69	-0.59	-0.63	-0.69
4-3	5.22	4.85	5.08	5.43	2.00	0.50	2.40	-2.50	0.098	0.022	0.023	0.004	-1.06	-0.19	1.68	-2.63
4-4	*7.28*	*7.26*	*7.54*	*7.28*	*196.10*	*205.90*	*154.40*	*152.00*	*0.011*	*0.010*	*0.007*	*0.008*	*195.76*	*205.59*	*154.18*	*151.75*
4-5	*7.24*	*7.32*	*7.35*	*6.93*	*85.70*	*144.80*	*149.50*	*5.20*	*0.008*	*0.011*	*0.011*	*0.006*	*85.45*	*144.46*	*149.16*	*5.01*
Avg RD4	**6.47**	**6.27**	**6.43**	**6.34**	**117.04**	**91.62**	**142.44**	**92.02**	**0.040**	**0.023**	**0.023**	**0.019**	**115.78**	**90.89**	**141.72**	**91.41**
Combined Avg.	**5.70**	**5.67**	**5.77**	**5.76**	**84.13**	**67.33**	**89.28**	**82.63**	**0.037**	**0.027**	**0.036**	**0.025**	**82.98**	**66.50**	**88.15**	**81.84**

Following the above and analyzing the physical and chemical characteristics of the coarse refuse disposal area at Mine No. 3 as they relate to the above, the following is submitted.

1. As per the U.S.D.A. Soil Conservation Service Jefferson County Soil Survey, it was determined that of the 157 acres of permitted coarse refuse disposal areas, 135 acres or approximately 86% of the area was previously disturbed (Palmerdale soil) by surface coal mining prior to the placement of coarse refuse. The remaining 22 acres is of the Montevallo-Nauvoo association and has an A horizon depth of approximately 6 inches and a B horizon depth of approximately 10 inches. The Palmerdale soil has an A horizon depth of 0 to 5 inches. The Palmerdale soil has no B horizon. Based on item number 1 above, the proposed 24 inches of cover material is adequate to meet the criteria
2. Samples of existing coarse refuse in Rock Dumps No. 1, 2, 3 and No. 4 along with historical data from coarse refuse produced from coal mined at JWR's Mine No. 3 indicate that the coarse refuse material is not considered acid forming. It has have a pH greater than 4 and a net potential acidity of greater than 5 tons per 1000 tons of CaCO3 equivalent (equates to an acid-base account of greater than negative 5). Based on items number 2 and 5 above, the proposed 24 inches of cover material is adequate to meet the criteria.
3. While the rooting depth of the existing vegetation averages just under 9 inches, the vegetative growth is good and additional root growth depth down to 24 inches is not prevented by inadequate particle size or inhibited by upward migration of acid from the coarse refuse. Based on item number 4 and 5 above, the proposed 24 inches of cover material is adequate to meet the criteria.

See photo log of existing vegetation in Attachment 1.

In a telephone interview with Mr. Hamilton Bryant, Auburn University Soil Laboratory, concerning the adequacy of twenty-four inches of depth for rooting medium for typical grasses (common Bermuda, Kentucky 31 Fescue, Winter Rye, Crimson Clover, etc.) in Central Alabama, the following opinion was rendered:

1) *A twelve to eighteen inch depth for rooting medium is adequate for common grasses found in Central Alabama, except during an extended period of extreme drought, at which time most grasses suffer, regardless of the rooting depth.*
2) *Rooting depths beyond eighteen inches are typically found in areas where an abundance of nutrients are found below this depth. The roots will travel below the eighteen inch depth to retrieve these nutrients, however, not as a means of survival, only because the nutrients are available.*
3) *With the proper neutralization of the top six to eight inches of acid forming or toxic forming material below the rooting medium, upward migration/contaminating of the acid forming or toxic material affecting the rooting medium is not anticipated. Sample results indicate neutralization of coarse refuse is not required.*
4) *With the proper neutralization of the top six to eight inches of acid forming or toxic forming material described at this project site, a twenty-four inch rooting medium depth for typical grasses (common Bermuda, Kentucky 31 Fescue, Winter Rye, Crimson Clover, etc.) found in Central Alabama is more than adequate.*

TECHNICAL EVALUATION

A. SOILS DESCRIPTION

The U.S. Department of Agriculture, Soil Conservation Service, published a soil survey for Jefferson County at the No. 3 Mine area in 1975. The attached Soil Sample Location Map soils information data was taken from the SCS soil map. As shown, the permitted and bonded mine area contains 2 different soil types:, Montevallo-Nauvoo association, steep and the Palmerdale complex steep. The following soil description and soil properties were taken from the Tuscaloosa County soil survey and will show the native soils are the best available nontoxic noncombustible material .

Additional data taken from on-site native soil samples is included in Section C. Cover Material Description and Attributes.

Montevallo – Nauvoo association, steep

This map unit consists of soils on strongly dissected areas of sandstone and shale plateaus in the northern and western parts of the county. Extensive surface and deep mining of coal occur in this area. The underlying layers of sandstone, siltstone, shale and coal are nearly level. The ridges are commonly underlain by sandstone and the side slopes are generally underlain shale and siltstone. The soils are in a regular pattern that is closely related to landscape position and underlying parent material. Areas of this map unit are large. Slopes range from 6 to 55 percent.

Montevallo soils, on the steep sides of the ridges, make up about 40 percent of the map unit. Typically, the surface layer is very dark gray shaly silt loam about 10 inches thick. The underlying material is weathered siltstone and shale. The slope of the Montevallo soils in this map unit is generally more than 15 percent.

Nauvoo soils, on ridgetops and ridge sides, make up about 25 percent of most areas. Typically, the surface layer is dark grayish brown fine sandy loam about 6 inches thick. The subsoil is about 36 inches thick. The upper 6 inches is yellowish brown fine sandy loam. The lower 30 inches is yellowish red clay loam. The underlying material is soft, highly weathered sandstone. The slope of the Nauvoo soils in this map unit is generally 6 to 15 percent. The available water capacity is very

low for the Montevallo and moderate for Nauvoo soils. Both soils are moderately permeable and have a low shrink-swell potential. If these soils do not have a plant cover, sheet and rill erosion is a very severe hazard for Montevallo soils and a severe hazard for Nauvoo soils. The surface layer of both soils is strongly acid to very strongly acid. The soils in this association are mainly used as woodland. They are poorly suited to cultivated crops. Slope and the hazard of erosion are severe limitations. The soils are fair to good for pasture and hay unless steep slopes restrict the use of equipment in most areas. These soils are fair to good for wild herbaceous plants, hardwood trees and coniferous plants. The soils are fairly well suited to use as woodland wildlife habitat. Slope is a severe limitation for septic tank absorption fields, dwellings and local roads and streets.

Palmerdale complex, steep

This complex consists of a steep, somewhat excessively drained Palmerdale soils and other soils on surface mining spoil piles. Slope ranges from 15 to 60 percent in most areas. Areas are 40 to 1,000 or more acres and irregular in shape. The areas of Palmerdale soils and other soils in this complex are so intricately mixed, or so small, that mapping them was not practical.

Palmerdale soils and similar soils make up about 70 percent of the map unit. Typically, Palmerdale soils are more than 60 inches thick. The soil is dark dark gray very shaly silt loam. In places, soils are similar to Palmerdale soils except that they are medium acid to moderately alkaline, or they have slopes of less than 15 percent. Other soils on benches, in drainways, and in basins, make up about 10 percent of the map unit. Typically, they have a silt loam surface alyer about 10 inches thick. The underlying material is very shaly silt loam. The available water capacity of Palmerdale soils is low. Palmerdale soils are moderately rapidly permeable and have a low shirk-swell potential. Surface runoff is very rapid. The hazard of rill and channel erosion is very severe. The surface layer is strongly acid to very strongly acid in Palmerdale soils and medium acid to moderately alkaline in soils similar to Palmerdale soils. The souls are not suited to cultivated crops, pasture and hay because of steep slopes, fragments on the surface, and the droughty nature of the souls. Palmerdale soils are suited to coniferous and deciduous trees; the potential productivity is moderate.

This soil is fairly suited to use as woodland wildlife habitat. It is not suited to most urban uses because of steep slopes and low strength. The Palmerdale soil is in capability subclass Vlls and woodland group 3x. The pH of this soil varies from 3.6 to 5.5.

B. COARSE REFUSE MATERIAL DESCRIPTION AND ATTRIBUTES

COARSE REFUSE MATERIAL PARTICLE SIZE DISTRIBUTION*

Sieve	Sample # 1	Average
Size	% Finer	%Coarser
2”	100.0	0.0
1 ½ “	78.0	22.0
1”	65.0	35.0
¾ “	53.0	47.0
½”	42.5	57.5
#4	24.0	76.0
#10	12.0	88.0
#200	0	100.0

*****Percent finer distribution taken from grain size distribution curve submitted with Rock Dump 4 modification. This sample was previously submitted to ASMC in the modification of Rock Dump #4 in Revision R-12. The sample submitted was actually taken from Mine No. 5. However, due to the involvement of the same coal seam and the same washing techniques for both Mine No. 3 and Mine No. 5 it is reasonable to expect the particle size distribution to be similar at both locations.

MINE NO. 3 COARSE REFUSE
NEUTRALIZATION AND ACID-BASE ACCOUNT

Sample #	Sample Date	p.H (s.u.)	HCl (ml)	NaOH (ml)	Neutralization Potential	Sulfur (%)	Acid-Base Account
RD-1	4-24-15	5.61	40.0	39.4	4.4	0.085	+1.7
RD-2	4-24-15	6.25	40.0	40.8	4.9	0.088	+2.1
RD-3	4-24-15	6.77	40.0	40.0	14.6	0.269	+6.2
RD-4	4-24-15	7.04	40.0	39.2	24.3	0.153	+19.5
Mine 3 Refuse	5-21-96	7.61			8.5	0.088	+5.75
AVERAGE		6.66			11.3	0.137	+7.05

C. COVER MATERIAL DESCRIPTION AND ATTRIBUTES

ROCK DUMP NO. 1 COVER MATERIAL PARTICLE SIZE DISTRIBUTION

Sieve	Sample # 1	Average
Size	% Finer	% Finer
1”	100.0	100.0
¾ “	97.1	97.1
½”	91.7	91.7
#4	67.1	67.1
#10	35.9	35.9
#200	0	0

ROCK DUMP NO. 2 COVER MATERIAL PARTICLE SIZE DISTRIBUTION

Sieve	Sample # 1	Sample # 2	Sample # 3	Sample # 4	Sample # 5	Sample # 6	Average
Size	% Finer	% Finer	% Finer	% Finer	% Finer	% Finer	% Finer
1”	99.1	100.0	100.0	98.6	100.0	98.3	99.33
¾ “	90.1	98.2	98.5	96.8	100.0	95.7	96.55
½”	75.3	83.7	88.2	85.1	93.1	87.7	85.52
#4	51.9	42.7	59.1	63.6	77.3	70.0	60.77
#10	31.8	20.7	41.5	43.1	52.1	59.0	41.37
#200	0	0	0	0	0	0	0

ROCK DUMP NO. 3 COVER MATERIAL PARTICLE SIZE DISTRIBUTION

Sieve	Sample # 1	Sample # 2	Sample # 3	Sample # 4	Average
Size	% Finer	% Finer	% Finer	% Finer	% Finer
1”	100.0	100.0	99.2	98.7	99.48
¾ “	96.2	97.9	97.6	97.4	97.28
½”	81.4	83.7	78.5	86.9	82.63
#4	41.9	50.3	42.6	89.0	55.95
#10	23.2	32.6	27.8	29.1	28.18
#200	0	0	0	0	0

ROCK DUMP NO. 4 COVER MATERIAL PARTICLE SIZE DISTRIBUTION

Sieve	Sample # 1	Sample # 2	Sample # 3	Sample # 4	Sample # 5	Average
Size	% Finer	% Finer	% Finer	% Finer	% Finer	% Finer
1”	100.0	97.1	100.0	98.4	100.0	99.10
¾ “	97.1	94.6	98.1	96.8	98.9	97.10
½”	90.2	86.4	92.0	88.0	92.2	89.76
#4	52.5	67.0	57.7	43.4	53.0	54.72
#10	30.8	47.4	26.6	20.7	27.8	30.66
#200	0	0	0	0	0	0

MINE NO. 3 COVER MATERIAL NEUTRALIZATION AND ACID-BASE ACCOUNT

Sample #	Sample Dates	Paste pH (s.u.)	Neutralization Potential	Sulfur (%)	Acid-Base Account
1-1	4/2 -4/6	**4.88**	**1.90**	**0.137**	**-2.37**
2-1	4/2 -4/6	4.99	2.63	0.047	1.17
2-2	4/2 -4/6	4.20	-0.73	0.039	-1.93
2-3	4/2 -4/6	3.73	-0.63	0.031	-1.59
2-4	4/2 -4/6	4.76	-0.45	0.050	-2.00
2-5	4/2 -4/6	4.11	-2.80	0.018	-3.35
2-6	4/2 -4/6	4.84	0.88	0.018	0.31
Avg. RD#2		**4.44**	**-0.18**	**0.034**	**-1.23**
3-1	4/2 -4/6	7.16	225.73	0.010	225.41
3-2	4/2 -4/6	7.26	174.15	0.012	173.79
3-3	4/2 -4/6	7.04	258.63	0.003	285.52
3-4	4/2 -4/6	6.73	53.25	0.004	53.14
Avg. RD#3		**7.05**	**184.69**	**0.007**	**184.47**
4-1	4/2 -4/6	7.43	273.28	0.008	273.02
4-2	4/2 -4/6	4.78	6.63	0.070	4.45
4-3	4/2 -4/6	5.15	0.60	0.037	-0.55
4-4	4/2 -4/6	7.34	177.10	0.009	176.82
4-5	4/2 -4/6	7.21	96.30	0.009	96.02
Avg. RD#4		**6.38**	**110.78**	**0.027**	**109.95**
Overall Average		**5.72**	**80.84**	**0.031**	**79.87**

JWR MINE NO. 3 EXISTING COVER MATERIAL
AUBURN DATA

Samples have been submitted to Auburn University Soils Department but no data has been received yet.

Sample ID	% Sulfur	% Organic Matter	NO3 - N ppm	Neutralizing Potential Tons CaCo3/ 1000 Tons	Maximum Potential Acidity	%Sand	% Silt	%Clay	Texture Class	H2O Avail. cm/cm

JWR MINE NO. 3 EXISTING COVER MATERIAL
AUBURN DATA

Sample ID	Soil Group	PH	Phosphorus P	Potassium K	Magnesium Mg	Calcium Ca	Limestone	N	P_2O_5	K_2O
			Pounds per acre				Tons/Acre	Pounds per acre		

D. RECLAMATION PLAN

Jim Walter Resources, Inc. considers sound reclamation an integral part of underground coal mining. Reclamation planning for the Mine No. 3 will continue with the best available practices being utilized to complement the post mine land use. Rock Dumps 1, 2, 3 & 4 have been reclaimed and Phase 1 bond releases will be requested upon approval of this revision.

ROCK DUMP NO. 1

None of the existing cover material sampled on RD-1 showed to be acid-forming. The vegetation is well established and there are no signs of erosion. It is not anticipated that any additional lime or nutrients will need to be added on the cover material. However, the vegetation will continued to be monitored and if needed, and maintenance will be performed as needed until a Phase 3 bond release is obtained.

ROCK DUMP NO. 2

None of the existing cover material sampled on RD-2 showed to be acid-forming. The acid-base accounts ranged from a low of -3.35 to a high of +0.31. The vegetation is well established on the southeast portion and is becoming established on the northwest portion. Some erosion has occurred on the northwest portion where the vegetation is not fully established. It is not anticipated that any additional lime or nutrients will need to be added on the cover material. However, the vegetation will continued to be monitored and if needed, and maintenance will be performed as needed until a Phase 3 bond release is obtained.

ROCK DUMPS NO. 3 & 4

None of the existing cover material sampled on RD-3 or RD-4 showed to be acid-forming. The vegetation is well established and there are no signs of erosion. It is not anticipated that any additional lime or nutrients will need to be added on the cover material. However, the vegetation will continued to be monitored and if needed, and maintenance will be performed as needed until a Phase 3 bond release is obtained.

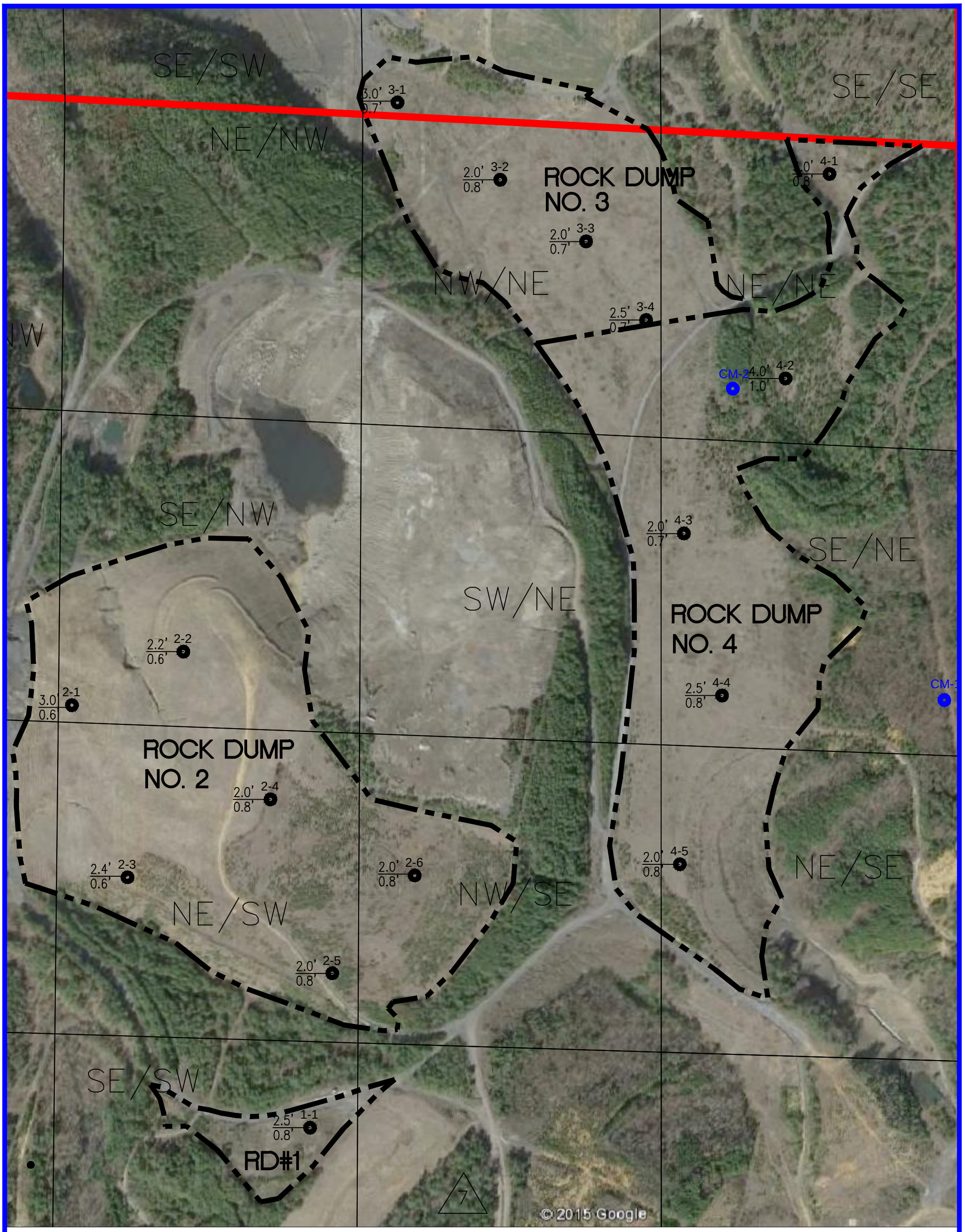
CERTIFICATION

I certify that the information, procedures and plans contained in this section are correct and accurate to the best of my knowledge and belief. The design of these fills meets or exceeds the applicable parts of 880-X-1OD-.33 through 880-X-1OD-.36.

Sanford M. Hendon, P.E.
Alabama Reg. No. 18208

ALABAMA REGISTERED No. 18208 PROFESSIONAL ENGINEER SANFORD M. HENDON

Date 5-14-15



Date of Google Photo: 02-06-2015

N
W E
S

ROCK DUMP BOUNDARY

Sample ID
Cover Material Thickness
Rooting Depth
2.0' 2-4
0.8'

SAMPLE LOCATION

0 400 800

mcgehee engineering corp
post office box 3431 - 450 19th street
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

jim walter resources, inc

MINE NO. 3
ASMC PERMIT NO. P-3257, R-20

Rock Dump Cover Material Modification
Sample Location Map

FILE:	SCALE:	JOB NO.:
JWRP3257R20rdcm	1" = 400'	
APPROVED BY:	DATE: REVISED	SHEET:
C.W.M.	05/11/15	1 OF 1

ROCK DUMP # 1

ROCK DUMP # 1

ROCK DUMP # 1

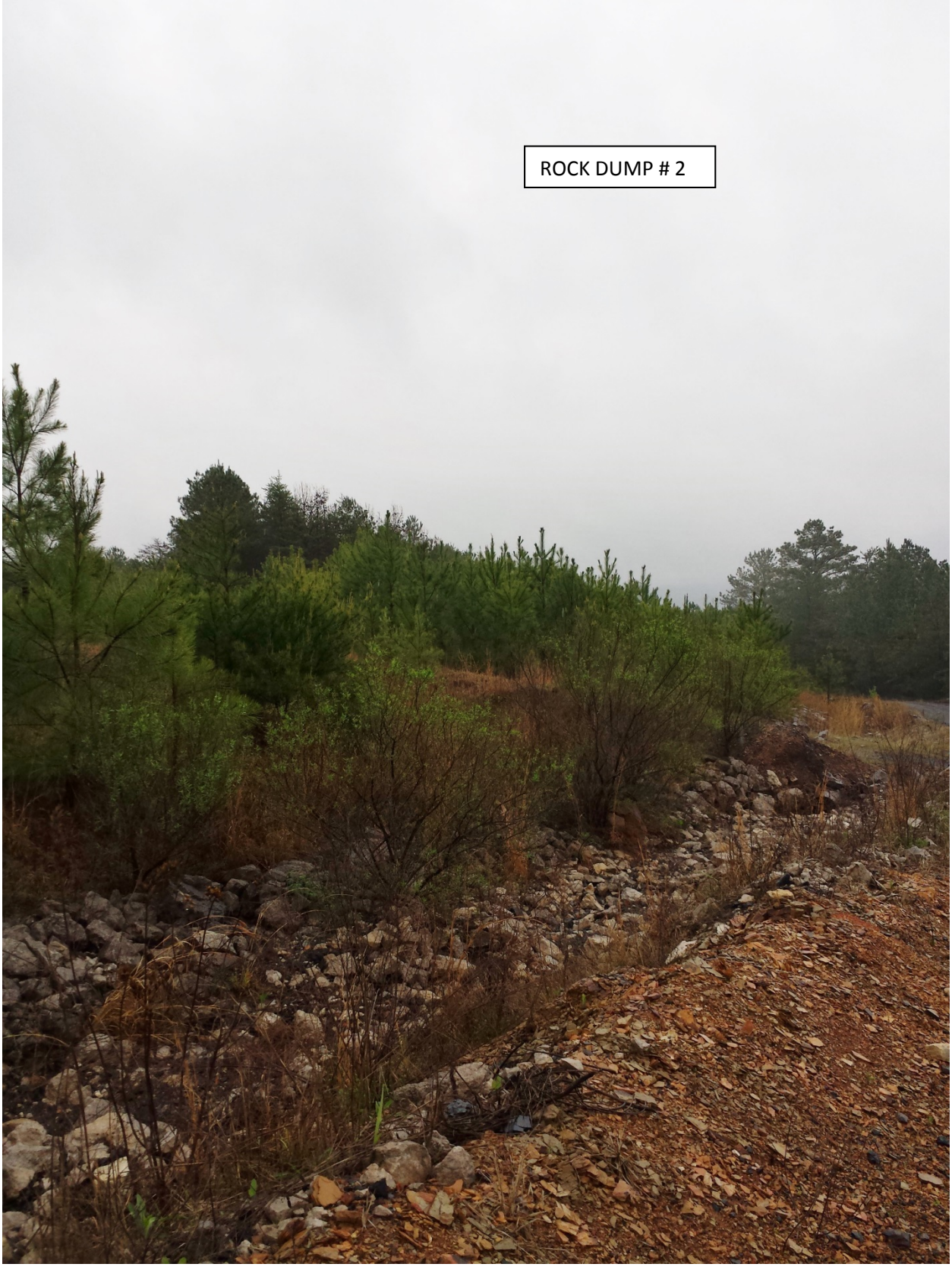
ROCK DUMP # 1

ROCK DUMP # 2

ROCK DUMP # 2

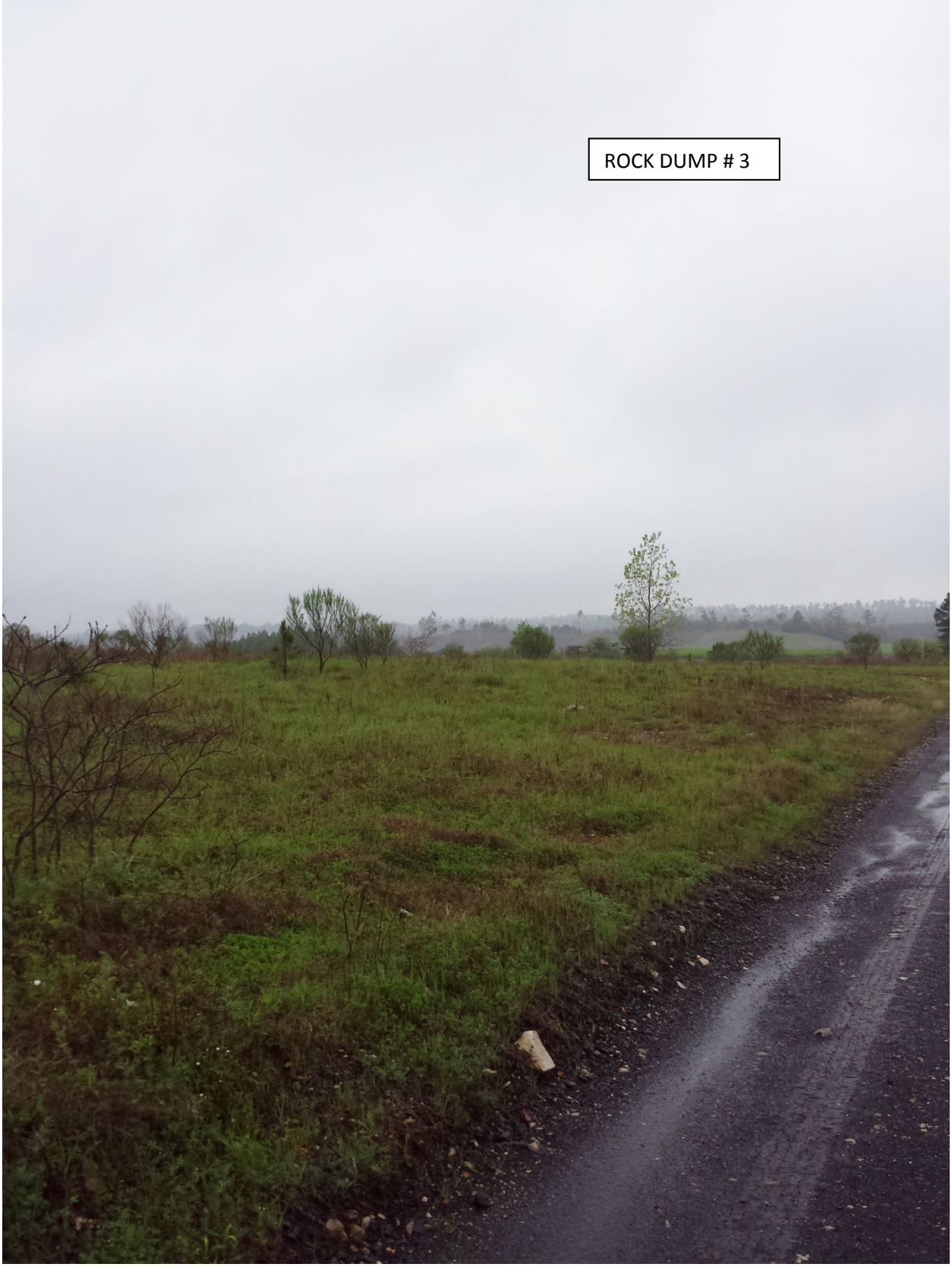
ROCK DUMP # 2

ROCK DUMP # 2


ROCK DUMP # 2

ROCK DUMP # 2

ROCK DUMP # 3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ROCK DUMP # 3

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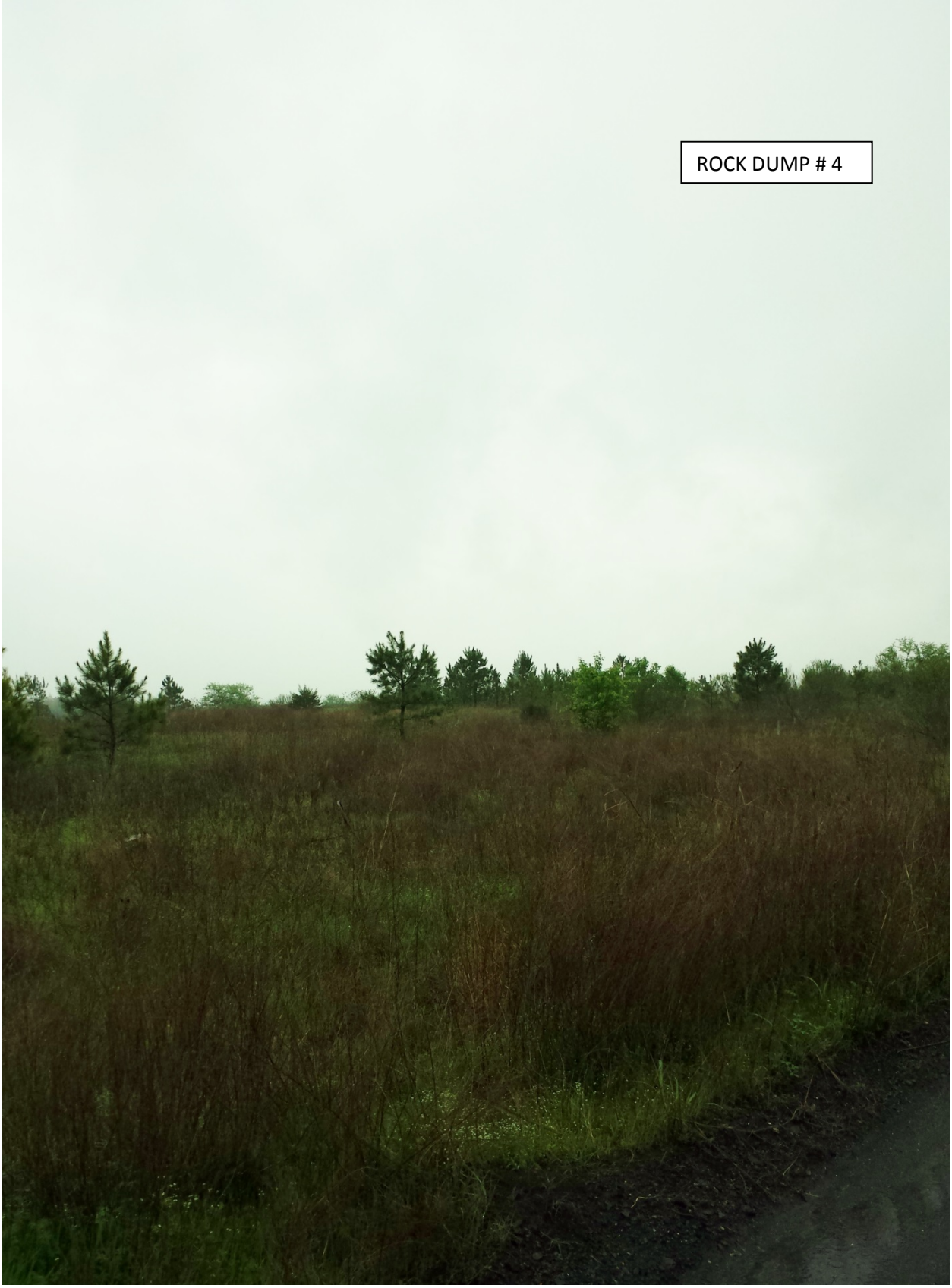
ROCK DUMP # 4

ROCK DUMP # 4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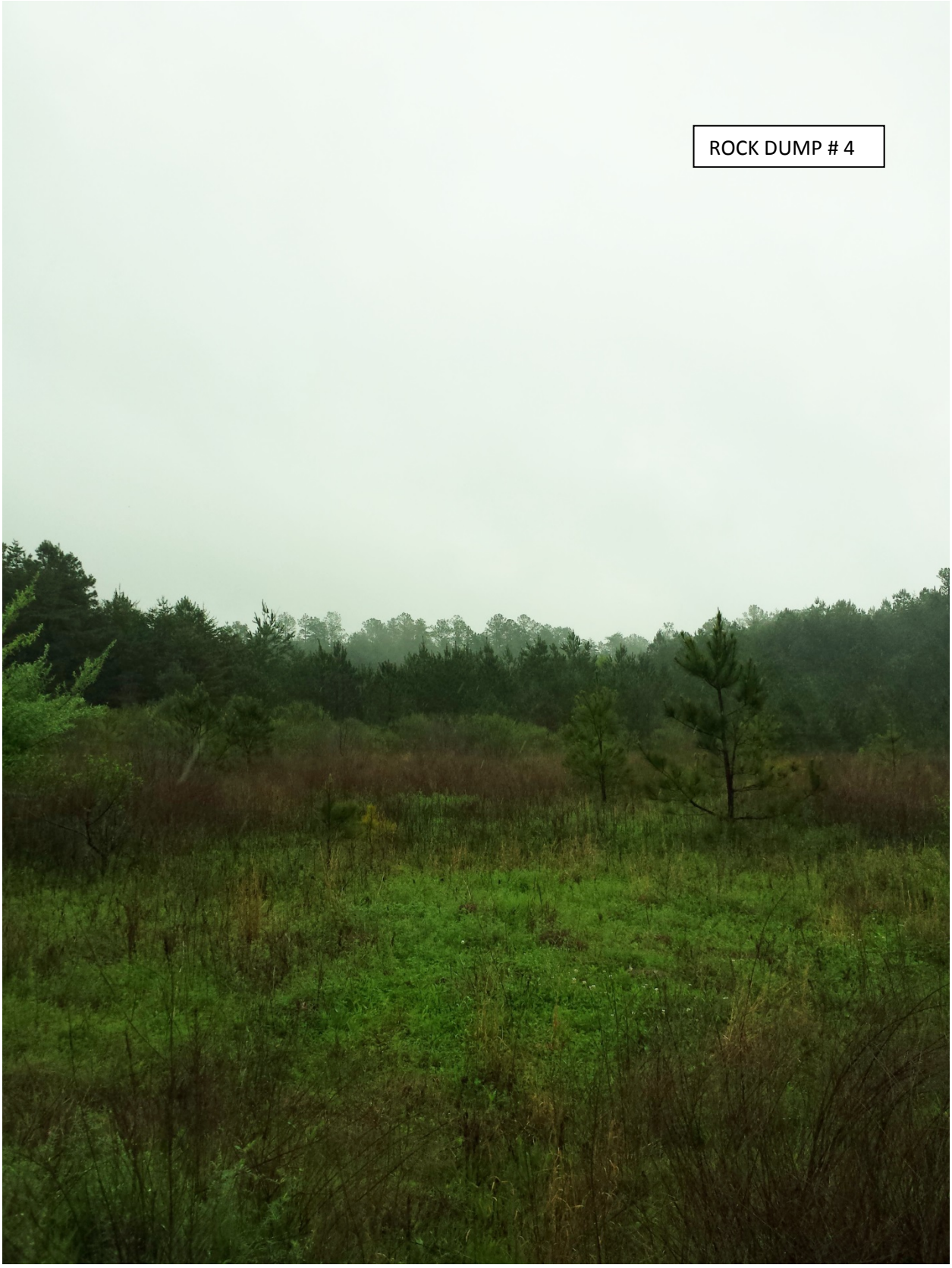
ROCK DUMP # 4

ROCK DUMP # 4

ROCK DUMP # 4