The Kentucky Reforestation Initiative

The Kentucky Department of Natural Resources

Paul Rothman

Reforestation Works, Trees Please!!

Current regulation supports the use of RAM #124 methodology

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Surface Mining Reclamation and Enforcement

405 KAR 16:190. Backfilling and grading.

RELATES TO: KRS 350.020, 350.093, 350.100, 350.405, 350.410, 350.450, 350.465; 30 CFR Parts 730-733, 735, 816.102-.106, 917; 30 USC 1253, 1255, 1265

STATUTORY AUTHORITY: KRS Chapter 13A, 350.028, 350.100, 350.465; 30 CFR Parts 730-733, 735, 816.102-.106, 917; 30 USC 1253, 1255, 1265

NECESSITY AND FUNCTION: KRS Chapter 350 in pertinent part requires the cabinet to promulgate rules and regulations establishing performance standards for protection of people and property, land, water and other natural resources, and aesthetic values, during surface mining activities and for restoration and reclamation of surface areas affected by mining activities. This regulation sets forth requirements for backfilling and grading, including requirements for highwall elimination, return to approximate original contour, timing of backfilling and grading, use of terraces, thick and thin overburden conditions, covering coal and acid and toxic materials, and regrading or stabilizing rills and gullies.

Section 1. Timing of backfilling and grading. Backfilling and grading shall be conducted in accordance with the requirements for contemporaneous reclamation as set forth in 405 KAR 16:020.

Section 2. General backfilling and grading requirements.

(1) Except as provided in subsection (9) of this section, all disturbed areas shall be returned to their approximate original contour. All spoil shall be transported, placed in a controlled manner, backfilled, compacted (where advisable to ensure stability or to prevent leaching of toxic materials), and graded to:

(a) Eliminate all highwalls (except as otherwise provided in Section 7 of this regulation), spoil piles, and depressions (excluding depressions and impoundments approved pursuant to subsection (5) or (6) of this section);

(b) Ensure a long-term static factor of safety of at least 1.3 for all portions of the reclaimed land;

(c) Achieve a postmining slope which does not exceed the angle of repose and which does prevent slides;

(d) Minimize erosion and adverse effects on surface and ground water both on and off the site; and

(e) Support the approved postmining land use.

(2) Spoil, except excess spoil disposed of in accordance with 405 KAR 16:130, shall be returned to the excavated areas.

(3) Disposal of coal processing waste and underground development waste in the mined-out area shall be in accordance with 405 KAR 16:140, except that a long-term static safety factor of 1.3 shall be achieved.

(4) On approval by the cabinet in order to conserve soil moisture, ensure stability, and control erosion on final graded slopes, cut-and-fill terraces may be allowed, if the terraces are compatible with the approved postmining land use and are appropriate substitutes for construction of lower grades on the reclaimed lands. The terraces shall meet the following requirements:

(a) The width of the individual terrace bench shall not exceed twenty (20) feet, unless specifically approved by the cabinet as necessary for stability, erosion control, or roads included in the approved postmining land use plan.

(b) The vertical distance between terraces shall be as specified by the cabinet, to prevent excessive erosion and to provide long-term stability.

(c) The slope of the terrace outslope shall not exceed 1v:2h (fifty (50) percent). Outslopes which exceed 1v:2h (fifty (50) percent) may be approved, if they have a minimum static safety factor of more than 1.3, provide adequate control over erosion, and closely resemble the surface configuration of the land prior to mining. In no case may highwalls be left as part of terraces.

(d) Culverts and underground rock drains shall be used on the terrace only if approved by the cabinet.

(5) Small depressions may be constructed on backfilled areas, if the depressions:

(a) Are needed to minimize erosion, conserve soil moisture, create or enhance wildlife habitat, or promote vegetation;

(b) Are not disapproved by the cabinet;

(c) Are not substitutes for compliance with approximate original contour requirements;

(d) Do not adversely affect the stability of the backfilled area; and

(e) Are not located on steep-slope outslopes.

(6) Impoundments on backfilled areas may be approved, if the impoundments:

(a) Meet the applicable requirements of 405 KAR 16:060, Section 10 and 405 KAR 16:100;

(b) Are demonstrated, to the satisfaction of the cabinet in the permit application, to have no adverse effect on the stability of the backfilled area;

(c) Are consistent with and suitable for the approved postmining land use;

(d) Are specifically approved by the cabinet in the permit application; and

(e) Are not located on steep-slope outslopes.

(7) All surface mining activities on slopes above twenty (20) degrees, or on lesser slopes that the cabinet defines as steep slopes, shall comply with the requirements of 405 KAR 20:060.

(8) All final grading; preparation of overburden before replacement of topsoil, topsoil substitutes, and topsoil supplements; and placement of topsoil, topsoil substitutes, and topsoil supplements shall be done along the contour to minimize subsequent erosion and instability. If grading, preparation, or placement along the contour is hazardous to equipment operators, then grading, preparation, or placement in a direction other than generally parallel to the contour may be used. In all cases, grading, preparation, and placement shall be conducted in a manner which minimizes erosion and provides a surface for placement of topsoil, topsoil substitutes, and topsoil supplements which will minimize slippage.

(9) The postmining slope may vary from the approximate original contour if approval is obtained from the cabinet for:

(a) The provisions for thin overburden in Section 4 of this regulation;

(b) The provisions for thick overburden in Section 5 of this regulation;

(c) Mountaintop removal operations in accordance with 405 KAR 8:050, Section 4;

(d) A variance from approximate original contour requirements in accordance with 405 KAR 8:050, Section 6; or

(e) Incomplete elimination of highwalls in previously mined areas in accordance with Section 7 of this regulation.

Effective Date: November 26, 1991

Current regulation supports the use of RAM #124 methodology

coal, times the bulking factor to be determined for each permit area. The provisions of this section apply only if surface mining activities cannot be carried out to comply with Section 2 of this regulation to achieve the approximate original contour.

(2) In surface mining activities where the volume of spoil over the permit area is demonstrated to be more than sufficient to achieve the approximate original contour, surface mining activities shall be conducted to meet, at a minimum, the following standards:

(a) Transport, backfill, and grade all spoil and wastes, not required to achieve the approximate original contour of the permit area, to the lowest practicable grade, to achieve a static factor of safety of 1.3 and cover all acid-forming and other toxic-forming materials;

(b) Transport, backfill and grade excess spoil and wastes only within the permit area and dispose of those materials in accordance with 405 KAR 16:130.

(c) Transport, backfill, and grade excess spoil and wastes to maintain the hydrologic balance, in accordance with 405 KAR 16:060, 405 KAR 16:070, 405 KAR 16:080, 405 KAR 16:090, 405 KAR 16:100 and 405 KAR 16:110 and to provide long-term stability by preventing slides, erosion and water pollution.

(d) Transport, backfill, grade, and revegetate wastes and excess spoil to achieve an ecologically sound land use approved by the cabinet as compatible with the prevailing land uses in unmined areas surrounding the permit area.

(e) Eliminate all highwalls and depressions by backfilling with spoil and suitable waste materials; and

(f) Meet the revegetation requirements of 405 KAR 16:200 for all disturbed areas.

Section 6. Regrading or stabilizing rills and gullies. Except as provided in subsections (1) and (2) of this section, if rills or gullies deeper than nine (9) inches form in areas that have been regraded and topsoiled, the rills and gullies shall be filled, graded, or otherwise stabilized and the area reseeded and replanted according to 405 KAR 16:200.

(1) Rills or gullies less than nine (9) inches deep shall be stabilized and the area reseeded and replanted, if the rills or gullies are disruptive to the approved postmining land use or to the establishment of vegetation, may result in additional erosion and sedimentation, or may cause or contribute to the violation of a water quality standard.

(2) Rills and gullies deeper than nine (9) inches need not be filled, regraded, and revegetated if all of the following criteria are met:

(a) They are incised to solid bedrock or are otherwise stable and not likely to further erode;

(b) They are not disruptive to the approved postmining land use or to the establishment of the vegetative cover; and

(c) They neither cause nor contribute to the violation of water quality standards.

Section 7. Remining previously mined areas.

(1) General requirements. Remining operations on previously mined areas, including steep slope areas, that contain a pre-existing highwall shall comply with Sections 1 through 6 of this regulation except as provided in this section.

(2) Variances to backfilling and grading requirements for remining operations. The requirements within Section 2(1)(a) of this regulation to completely eliminate highwalls shall apply to remining operations, except for situations in which the volume of all reasonably available spoil is demonstrated, to the satisfaction of the cabinet in the permit application, to be insufficient to completely backfill and eliminate the pre-existing or modified highwall. The highwall shall be eliminated to the maximum extent technically practicable in accordance with the following criteria:

(a) All reasonably available spoil shall be used to backfill the area.

(b) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability (1.3 long-term static factor of safety). The exposed coal seam shall be covered in accordance with Section 3 of this regulation.

(c) Spoil generated or handled by the remining operation shall not be placed on the fill section of any existing or new bench.

(d) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The permittee shall demonstrate, to the satisfaction of the cabinet in the permit application, that the postmining highwall remnant will be stable. If the highwall remnant is determined by the cabinet to be unstable or potentially unstable, the permittee shall perform any corrective measures required by the cabinet to stabilize the highwall remnant.

(e) Spoil placed on the outslope during previous mining operations shall not be disturbed if the disturbance will cause instability of the remaining spoil or otherwise increase the hazard to the public health or safety or to the environment.

LP

Kentucky
Department for Surface Mining
Reclamation and Enforcement

Reclamation Advisory Memorandum

From: Carl Campbell, Commissioner C.C.

Date: March 10, 1997

Subject: Reforestation Initiative

RAM # 124

Introduction

In the spring of 1996, after conducting both field visits and public meetings, the Kentucky Environmental Quality Commission issued a resolution to Governor Paul E. Patton and the Natural Resources and Environmental Protection Cabinet (NREPC) concerning the establishment of trees and shrubs on mine sites. The specific concern was that certain regrading and reclamation techniques currently being used or promoted seemed to inhibit the proper growth and development of deep rooted woody species.

In response the NREPC, through the Department for Surface Mining Reclamation and Enforcement (DSMRE), established a very diverse working group of professionals from industry, environmental groups, the U.S. Office of Surface Mining, the University of Kentucky Extension Service, the Department of Fish and Wildlife Resources, the Department for Natural Resources and its Division of Forestry, DSMRE, and others. The purpose of the group was to review current reclamation policy and practices that impact tree survival and growth on mined lands, and develop reclamation advisory guidance that, when utilized, would promote woody species use and development on mined lands.

The working group approached this task in a most professional manner and with a cooperative, progressive spirit. On behalf of DSMRE, I want to express my sincere appreciation to the members of the working group for their hard work and for the excellent result. The individual members are identified at the end of this document.

The following information represents the suggestions conveyed by the working group, and is henceforth accepted by the DSMRE as appropriate reclamation practice for those mined areas reclaimed to a postmining land use which requires the establishment of deep rooted woody species.

Reclamation Advisory Memorandum #124

Identified three prevalent problems associated with current reclamation practices. They are:

- **Excessive compaction of the rooting medium by repeated tracking with large heavy equipment**
- **Selection of inappropriate materials for the rooting medium**
- **Excessive competition from the herbaceous ground cover species established to control erosion**

RAM #124 Recommends the Following Practices

- Select the best available on-site growth medium. The soiling material should have low to moderate levels of soluble salts, a pH of 5.0 to 7.0, low pyritic sulfur content, and a texture conducive to proper drainage. However, some sites simply don't have this type of soiling material available. In those cases it is very important that the tree and groundcover species selected will tolerate the site conditions.
- Minimizing compaction during the application and final grading of the soiling material is extremely important. Compaction can be minimized by dumping and leveling of the final surface layer in separate operations. When the soiling material is placed, it should be dumped in piles that tightly abut one another. Once all the soiling medium has been placed, a low pressure bulldozer should then be used to gently level the area in one or two passes.
- Slow growing tree compatible ground covers should be selected (TRM # 21 should be consulted for recommendations).
- Fertilizer requirements should be based on a current soil test, and the soil testing laboratory should be informed that the area will be planted in trees.
- Selection of tree and shrub species should be appropriate to the approved post mining land use.
- Tree planting activities should always be performed by experienced and reputable tree planters.

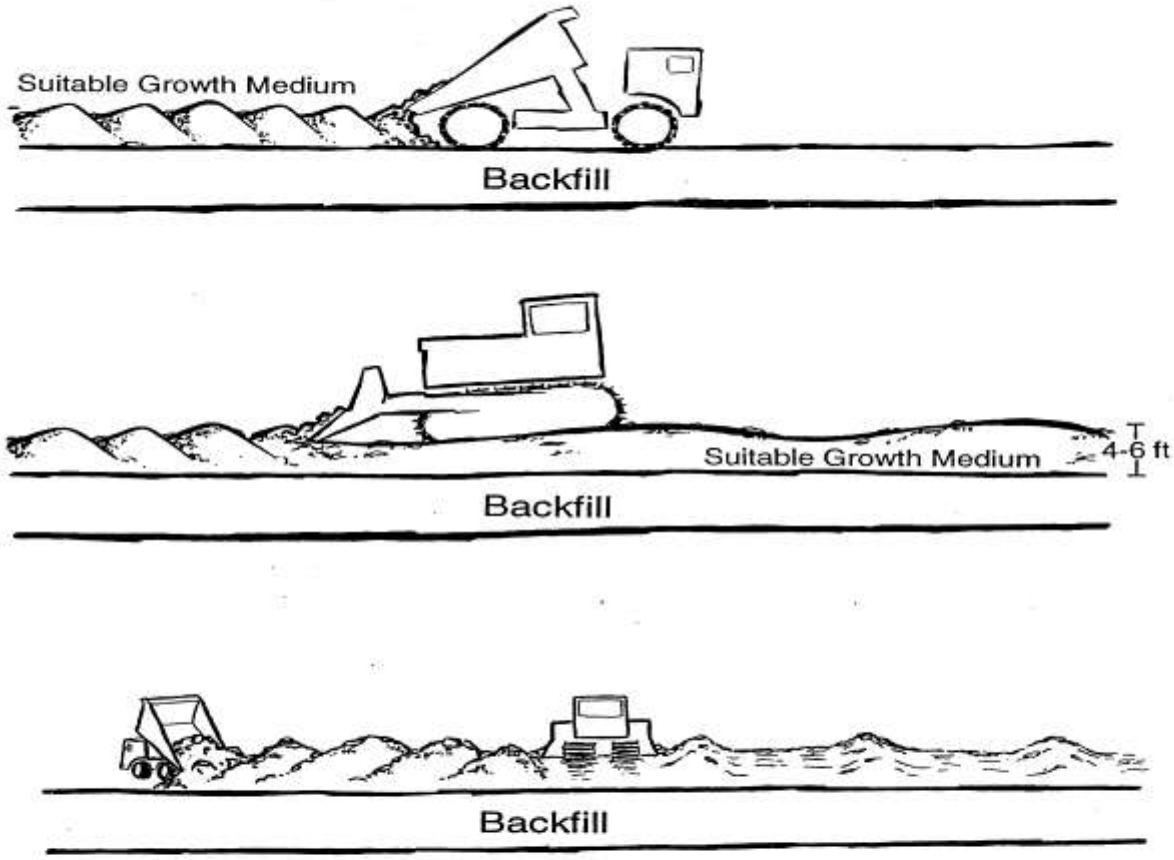


Diagram 1. Area Mining or Mountaintop Removal methods

illustrations not to scale

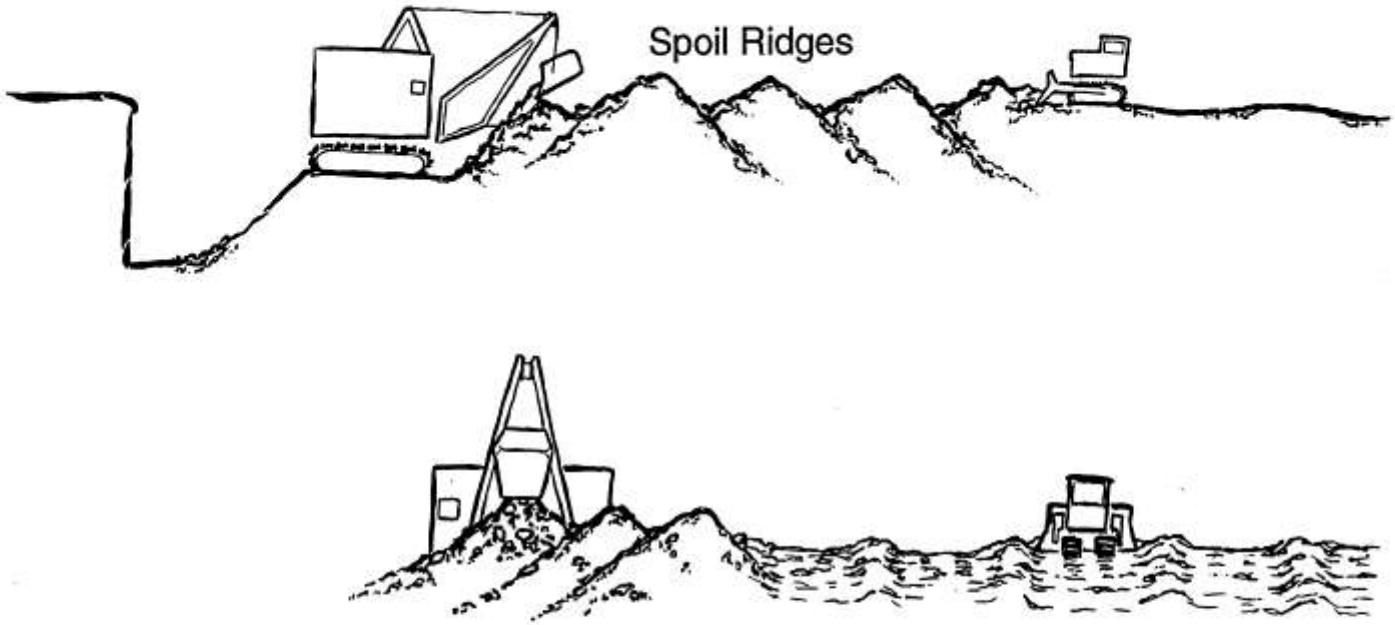


Diagram 2. Area Mining or Mountaintop Removal by Dragline method

illustrations not to scale

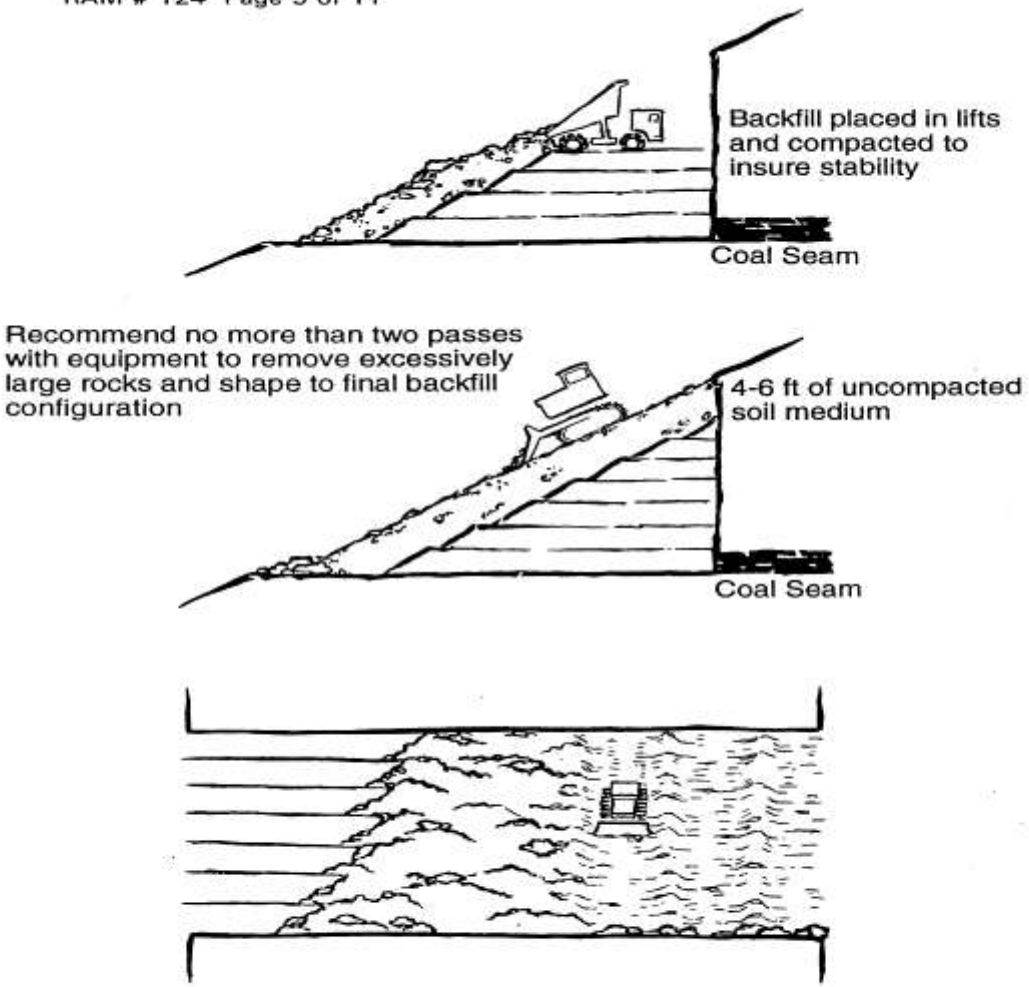


Diagram 3. Contour Mining or Other Sloped Areas

illustrations not to scale

Table 1. The effects of reclamation technique on white pine productivity and stand value at 30 years.

Case	White Pine Site Type	Site Index* (Base Age 50)	Bd. Ft. Vol. at Age 30 (MBF**/ac)	Harvestable Wood Products	Harvest Price ($/MBF)	Total Value ($/acre)
I	Projected average quality of a post-SMCRA reclaimed mine soil (Torbert et al., 1994)	60	6.1	pulp	20	122
II	Average quality of an undisturbed Appalachian forest site (Doolittle 1958)	80	35.1	small sawtimber	50	1755
III	Actual quality of a white pine stand on a good minesoil in Virginia (Kelting et al., 1997)	110	46.4	large sawtimber	75	3480

Site Index = Expected tree height after 50 years.

*MBF = thousand board feet (Vimmerstedt, 1962).

Study conducted by James A. Burger, Professor of Forest Soil Science, Virginia Polytechnic Institute and State University

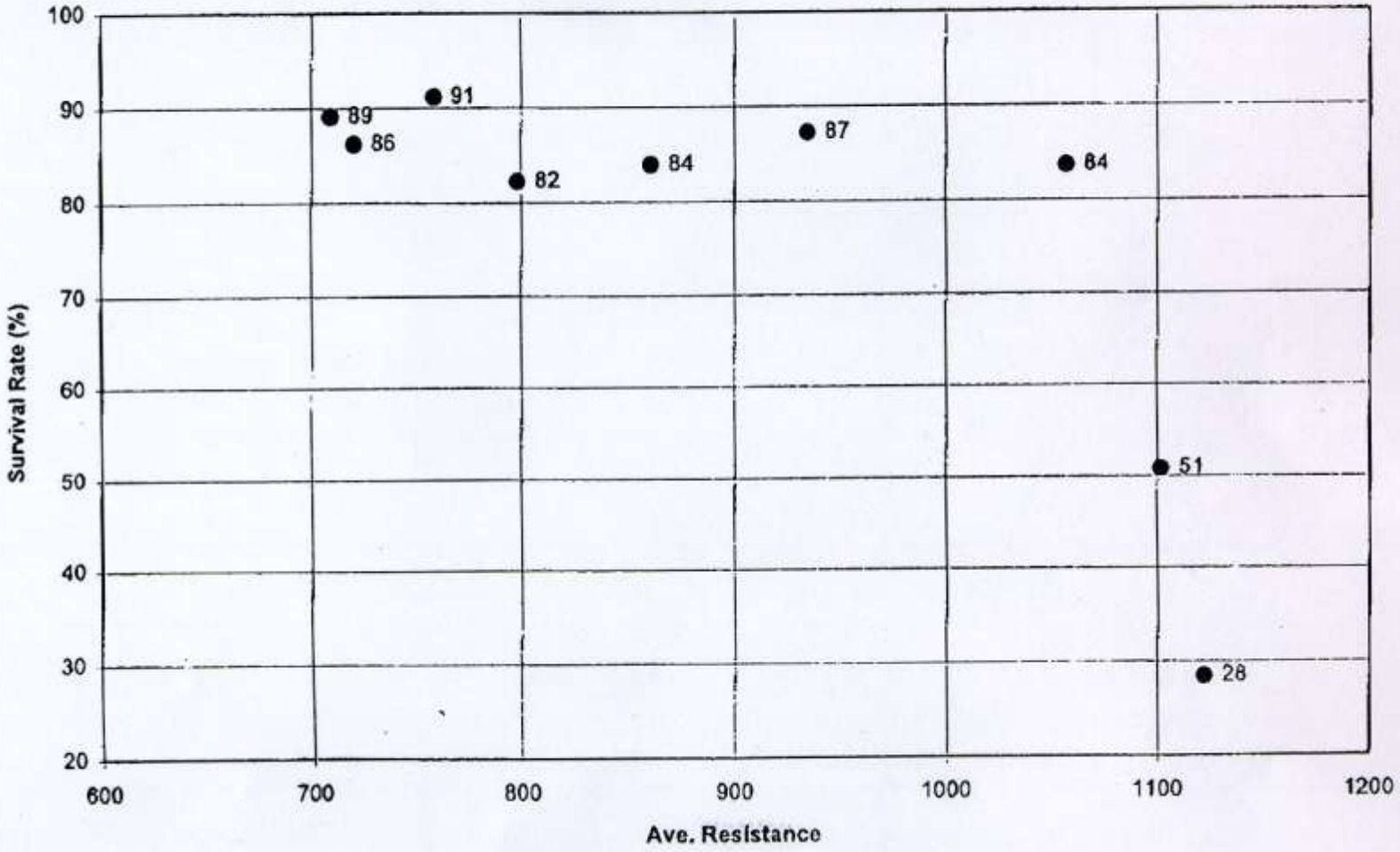
Starfire High Value Tree Reclamation Project
Preliminary survival data for 1997

	strike off		uncompacted		compacted	
	cell# 1		**cell# 2**		**cell# 9**	
no mulch	black walnut	95%	black walnut	95%	black walnut	95%
	paulownia	38%	paulownia	55%	paulownia	25%
	red oak	91%	red oak	93%	red oak	100%
	white ash	94%	white ash	89%	white ash	95%
	white oak	91%	white oak	90%	white oak	91%
	white pine	87%	white pine	92%	white pine	82%
	yellow-poplar	92%	yellow-poplar	90%	yellow-poplar	98%
	cell# 6		**cell# 3**		****cell# 8**	
hard wood bark mulch	black walnut	97%	black walnut	98%	black walnut	29%
	paulownia	72%	paulownia	50%	paulownia	25%
	red oak	99%	red oak	100%	red oak	96%
	white ash	97%	white ash	92%	white ash	97%
	white oak	96%	white oak	94%	white oak	53%
	white pine	83%	white pine	95%	white pine	15%
	yellow-poplar	94%	yellow-poplar	95%	yellow-poplar	41%
	cell# 5		**cell# 4**		****cell# 7**	
barn straw mulch	black walnut	96%	black walnut	97%	black walnut	0%
	paulownia	45%	paulownia	17%	paulownia	15%
	red oak	94%	red oak	97%	red oak	52%
	white ash	99%	white ash	99%	white ash	82%
	white oak	93%	white oak	87%	white oak	21%
	white pine	87%	white pine	85%	white pine	14%
	yellow-poplar	97%	yellow-poplar	94%	yellow-poplar	15%

**Cells 7 and 8 were planted in April 1996. Cells 1-6, and cell 9 were planted in March 1997.

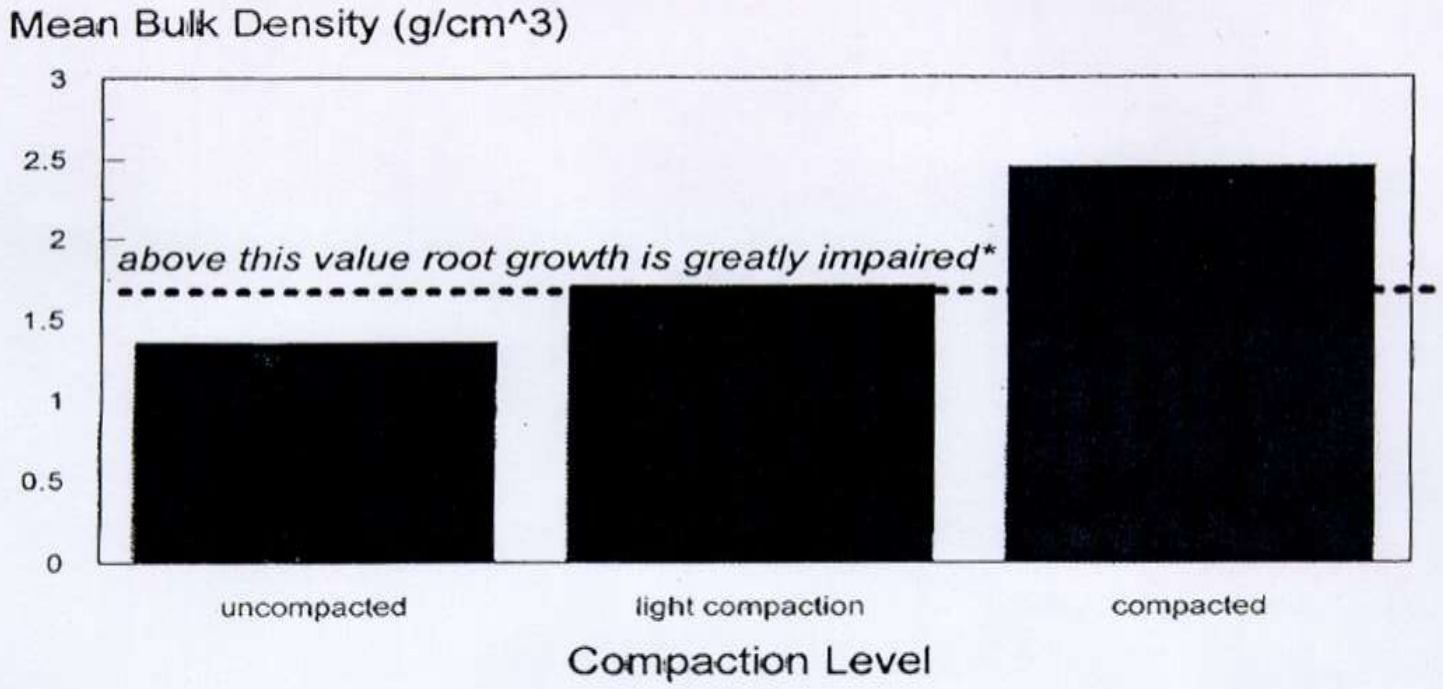
Figure 6

Survival Rate vs. Resistance to Penetration



Robinson Forest Initiative High Value Tree Reclamation Project

Bulk Density



(means with different superscripts are significantly different at $P < 0.05$)
*(The Nature and Properties of Soils (Brady, N. 1990))

Figure 1

STARFIRE HIGH VALUE TREE RECLAMATION PROJECT

2000 - 2004 AVERAGE SURVIVAL AND GROWTH Cells 1-15

	SPECIES	%SURVIVAL								HEIGHT (CM)							
		1997	1998	1999	2000	2001	2002	2003	2004	1997	1998	1999	2000	2001	2002	2003	2004
UNCOMPACT	White Pine	92	81	82	81	82	79	78	82	36	42	66	112	153	225	323	431
	White Ash	95	88	86	69	87	83	80	80	40	51	71	100	131	180	242	308
	Black Walnut	97	68	76	65	75	68	69	68	77	75	66	83	90	113	150	184
	Yellow-poplar	93	86	77	64	83	82	79	80	24	32	48	81	107	125	220	276
	Royal Paulownia	37	29	40	33	30	30	29	26	9	66	104	276	275	296	350	497
	White Oak	88	69	87	70	83	80	84	81	28	32	39	60	88	121	168	217
	Northern Red Oak	99	86	85	73	84	80	83	82	28	31	41	67	100	157	228	278
	TOTAL AVERAGE	**86**	**72**	**76**	**65**	**75**	**72**	**72**	**71**	**35**	**47**	**62**	**111**	**135**	**174**	**240**	**313**
ROUGH GRADE	White Pine	87	52	51	50	50	49	56	50	34	36	46	70	97	130	220	307
	White Ash	98	86	85	86	78	82	81	81	41	54	71	90	106	141	183	236
	Black Walnut	100	61	61	52	59	57	57	55	82	72	63	77	75	88	98	116
	Yellow-poplar	94	63	61	51	59	57	54	52	24	29	40	61	74	89	152	203
	Royal Paulownia	52	32	44	35	30	31	24	21	11	63	92	156	198	224	261	354
	White Oak	94	55	78	66	68	71	70	69	29	31	33	49	72	92	144	197
	Northern Red Oak	96	71	70	57	62	63	65	64	29	28	31	58	85	121	188	242
	TOTAL AVERAGE	**89**	**60**	**64**	**57**	**58**	**59**	**58**	**56**	**36**	**45**	**54**	**80**	**101**	**126**	**178**	**236**
COMPACT	White Pine	37	18	12	8	5	3	3	4	34	33	32	23	23	19	23	57
	White Ash	91	87	85	62	82	78	82	82	40	43	45	52	66	83	98	118
	Black Walnut	41	26	34	13	15	21	19	18	79	51	31	30	30	27	32	40
	Yellow-poplar	59	50	30	9	15	15	9	11	27	25	21	44	40	48	90	98
	Royal Paulownia	21	7	12	8	8	7	4	3	23	76	82	86	126	79	134	173
	White Oak	49	25	49	25	27	27	24	21	27	24	16	25	33	40	48	62
	Northern Red Oak	82	66	51	19	23	24	19	17	27	20	17	38	33	63	82	106
	TOTAL AVERAGE	**54**	**40**	**39**	**21**	**25**	**25**	**23**	**22**	**37**	**39**	**35**	**42**	**50**	**51**	**72**	**93**
DOZER RIPPED	White Pine	---	---	---	46	44	40	35	36	---	---	---	35	48	67	109	169
	White Ash	---	---	---	76	88	94	89	79	---	---	---	53	65	74	111	124
	Black Walnut	---	---	---	58	62	55	51	54	---	---	---	53	50	52	63	74
	Yellow-poplar	---	---	---	31	32	34	29	30	---	---	---	40	50	49	89	113
	Royal Paulownia	---	---	---	34	33	42	35	38	---	---	---	59	119	131	181	231
	White Oak	---	---	---	49	43	49	33	33	---	---	---	33	38	42	63	79
	Northern Red Oak	---	---	---	54	50	53	33	34	---	---	---	35	37	39	61	73
	TOTAL AVERAGE				**50**	**50**	**52**	**44**	**43**				**44**	**58**	**65**	**97**	**123**

Research by Don Graves, University of Kentucky

STARFIRE HIGH VALUE TREE RECLAMATION PROJECT

2000 - 2004 DIAMETER MEASURMENTS

CELLS 1 - 15

	Species	Diameter @ Ground					Diameter @ 4.5'				
		2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
UNCOMPACT	White Pine	2.67	3.66	5.21	6.93	8.76	0.94	1.24	1.96	3.40	5.31
	White Ash	1.65	1.65	2.62	3.71	4.37	1.07	1.07	1.22	1.60	2.24
	Black Walnut	1.12	1.12	1.78	2.41	3.10	0.33	0.33	0.99	0.69	1.30
	Yellow-poplar	1.55	1.55	2.24	4.01	4.88	0.79	0.79	1.30	1.57	2.34
	Royal Paulownia	4.98	6.86	7.67	10.34	12.17	3.05	3.96	4.60	6.40	8.69
	White Oak	1.22	2.06	2.08	3.12	4.17	0.53	0.76	0.94	1.04	1.63
	Northern Red Oak	1.45	2.03	2.62	3.61	4.83	0.74	0.97	1.12	1.40	2.13
	TOTAL AVERAGE	**2.09**	**2.70**	**3.46**	**4.88**	**6.04**	**1.06**	**1.30**	**1.73**	**2.30**	**3.37**
ROUGH GRADE	White Pine	1.75	2.29	3.05	4.70	7.04	0.17	0.39	0.44	1.73	3.35
	White Ash	1.96	2.16	2.41	3.07	4.01	0.23	0.35	0.44	1.02	1.63
	Black Walnut	1.24	1.37	1.27	1.73	2.24	0.03	0.06	0.27	0.18	0.43
	Yellow-poplar	1.35	2.13	1.93	3.12	4.06	0.21	0.29	0.33	0.79	1.55
	Royal Paulownia	4.39	6.20	5.33	6.96	8.74	0.83	1.20	1.17	3.45	5.28
	White Oak	1.24	1.70	1.78	2.97	3.96	0.10	0.19	0.28	0.71	1.40
	Northern Red Oak	1.32	1.96	2.18	3.28	4.32	0.12	0.28	0.32	0.99	1.85
	TOTAL AVERAGE	**1.89**	**2.54**	**2.57**	**3.69**	**4.91**	**0.24**	**0.39**	**0.46**	**1.27**	**2.21**
COMPACT	White Pine	0.51	0.51	0.38	0.46	1.09	0.00	0.00	0.05	0.03	0.25
	White Ash	1.09	1.60	1.37	2.03	2.51	0.15	0.38	0.58	0.20	0.48
	Black Walnut	0.41	0.64	0.46	0.64	0.86	0.00	0.03	0.00	0.00	0.00
	Yellow-poplar	0.79	0.99	0.91	1.80	2.36	0.00	0.05	0.05	0.36	0.53
	Royal Paulownia	2.36	4.19	2.49	3.61	5.23	1.22	1.98	1.50	1.73	2.69
	White Oak	0.91	0.69	0.61	0.91	1.17	0.15	0.08	0.10	0.00	0.05
	Northern Red Oak	0.69	1.04	0.89	1.24	2.39	0.05	0.15	0.41	0.08	0.41
	TOTAL AVERAGE	**0.97**	**1.38**	**1.02**	**1.53**	**2.23**	**0.22**	**0.38**	**0.38**	**0.34**	**0.63**
DOZER RIPPED	White Pine	0.74	1.09	1.47	2.24	4.04	0.00	0.00	0.10	0.33	1.02
	White Ash	0.86	1.17	1.52	1.65	2.24	0.13	0.20	0.23	0.23	0.41
	Black Walnut	0.76	0.91	0.86	1.22	1.68	0.00	0.00	0.00	0.03	0.10
	Yellow-poplar	0.76	1.02	0.94	1.65	2.57	0.00	0.00	0.08	0.10	0.30
	Royal Paulownia	1.35	4.34	3.73	4.42	5.54	0.58	1.75	2.39	2.41	3.40
	White Oak	0.66	0.81	0.76	1.19	1.68	0.00	0.00	0.10	0.03	0.18
	Northern Red Oak	0.53	0.69	0.61	1.12	1.35	0.00	0.00	0.05	0.03	0.08
	TOTAL AVERAGE	**0.81**	**1.43**	**1.42**	**1.93**	**2.73**	**0.10**	**0.28**	**0.42**	**0.45**	**0.78**

Diameter Measurements at Ground Level and 4.5 Ft. (DBH) are all approximate
Diameter Measurements are in Centimeters

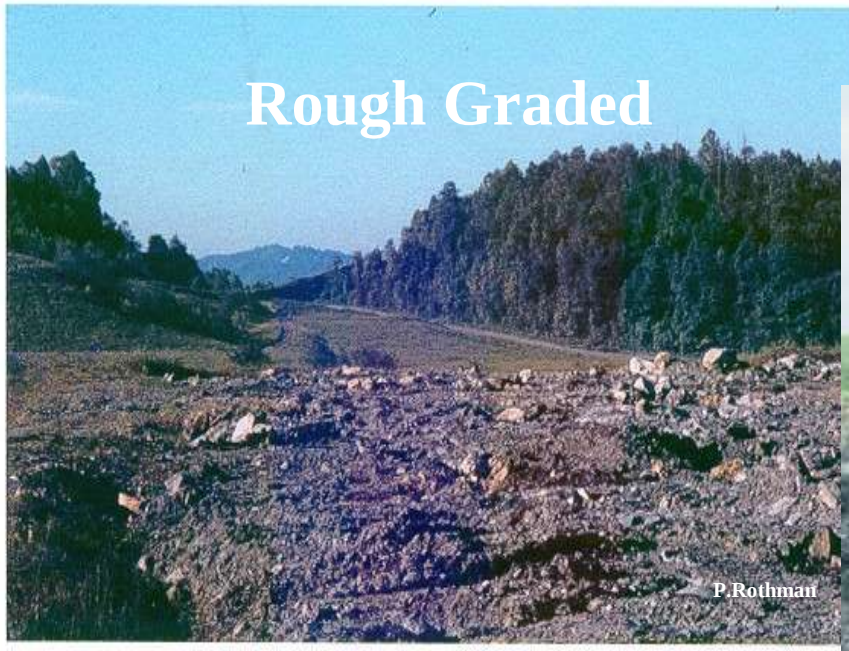
Research by Don Graves, University of Kentucky


APPALACHIAN REGIONAL
ARRI
REFORESTATION INITIATIVE

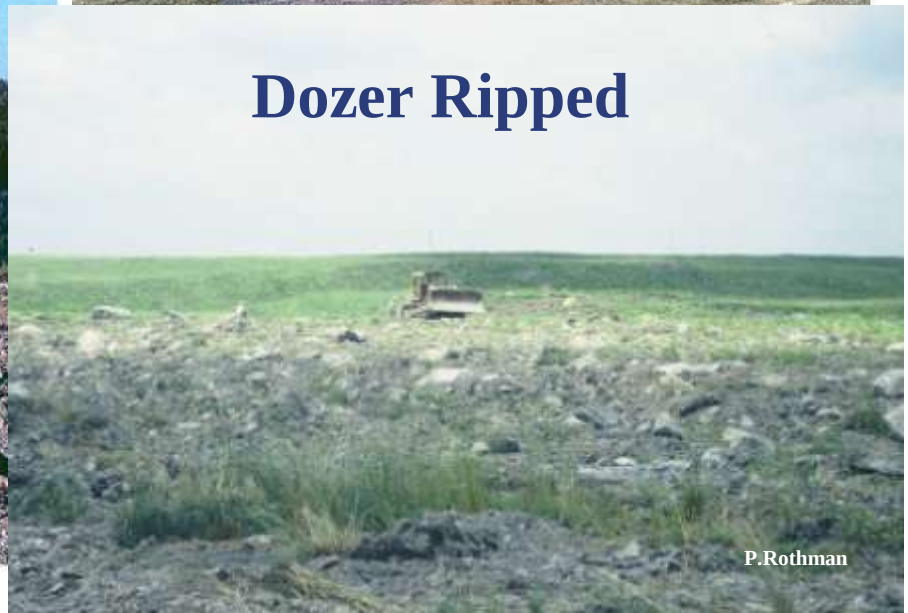
Compacted

Loose Dumped

Rough Graded



Dozer Ripped



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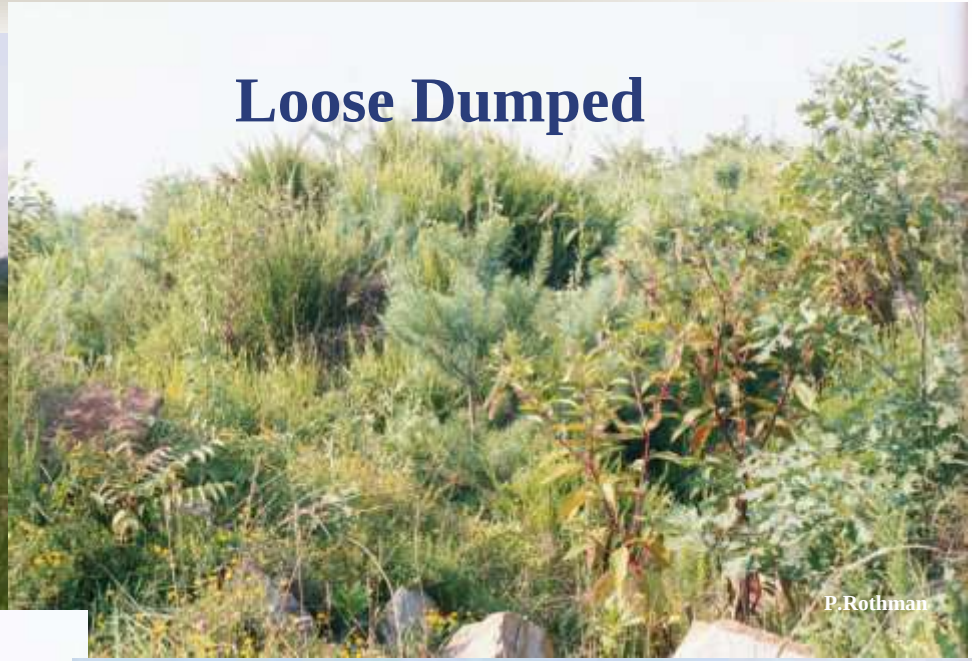
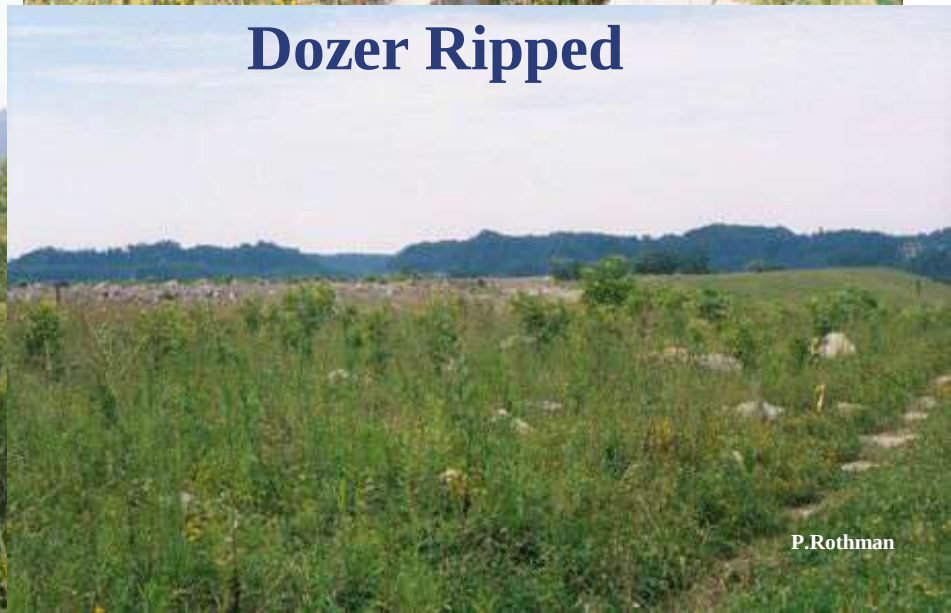


Rough Graded

Dozer Ripped

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P.Rothman

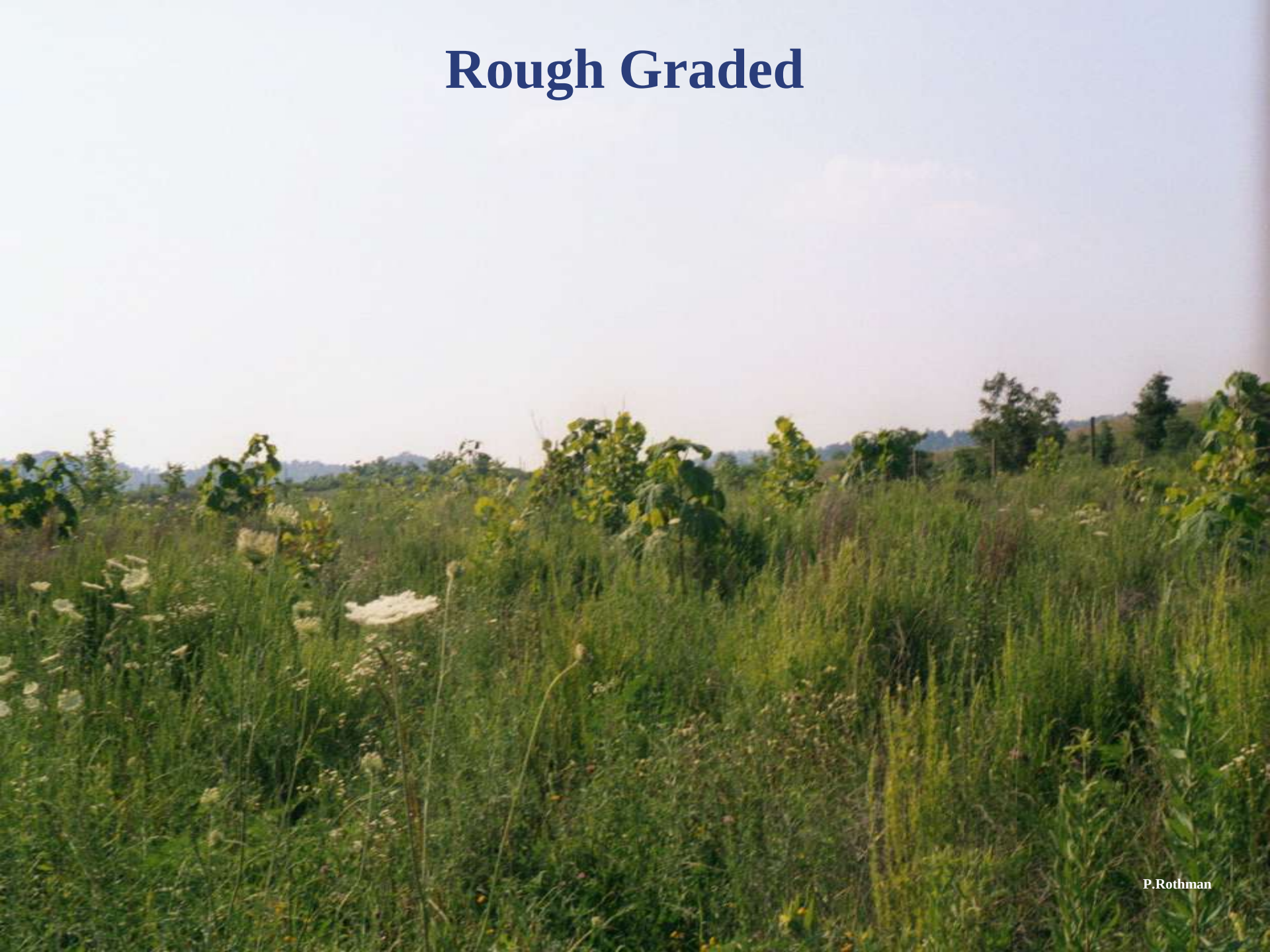
Compacted

P. Rothman

Rough Graded

P.Rothman

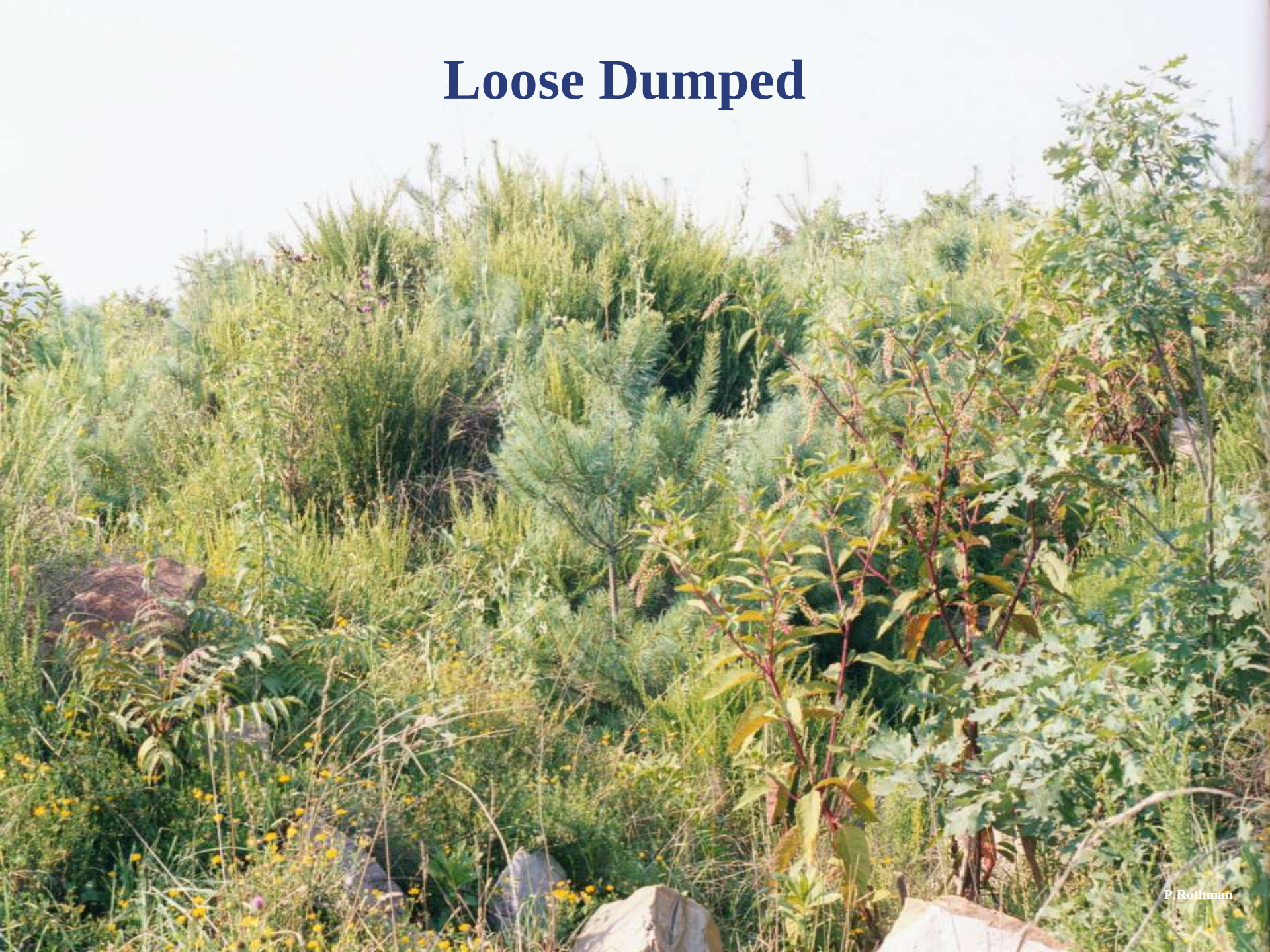
Rough Graded



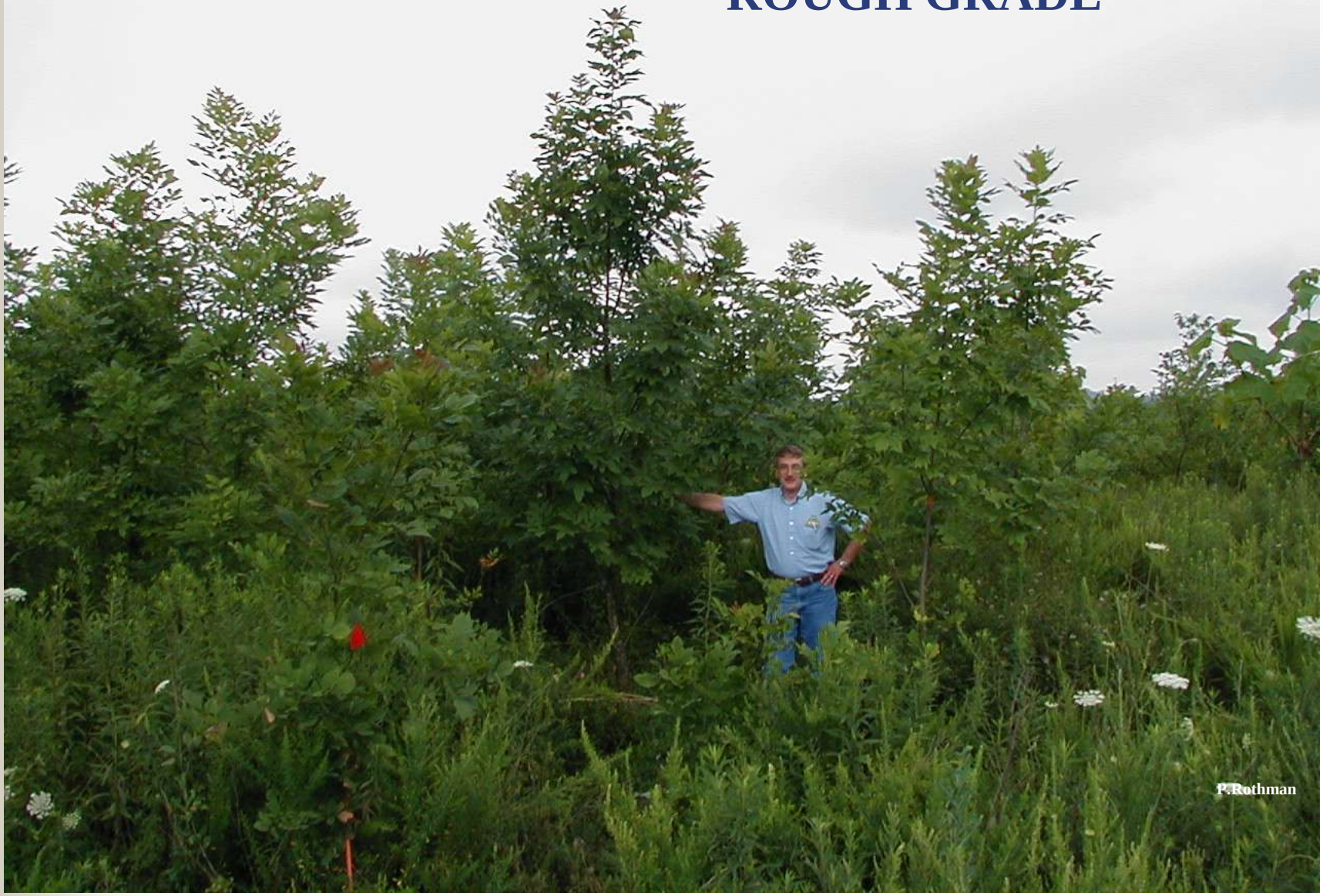
P.Rothman

Loose Dumped

Loose Dumped



ROUGH GRADE



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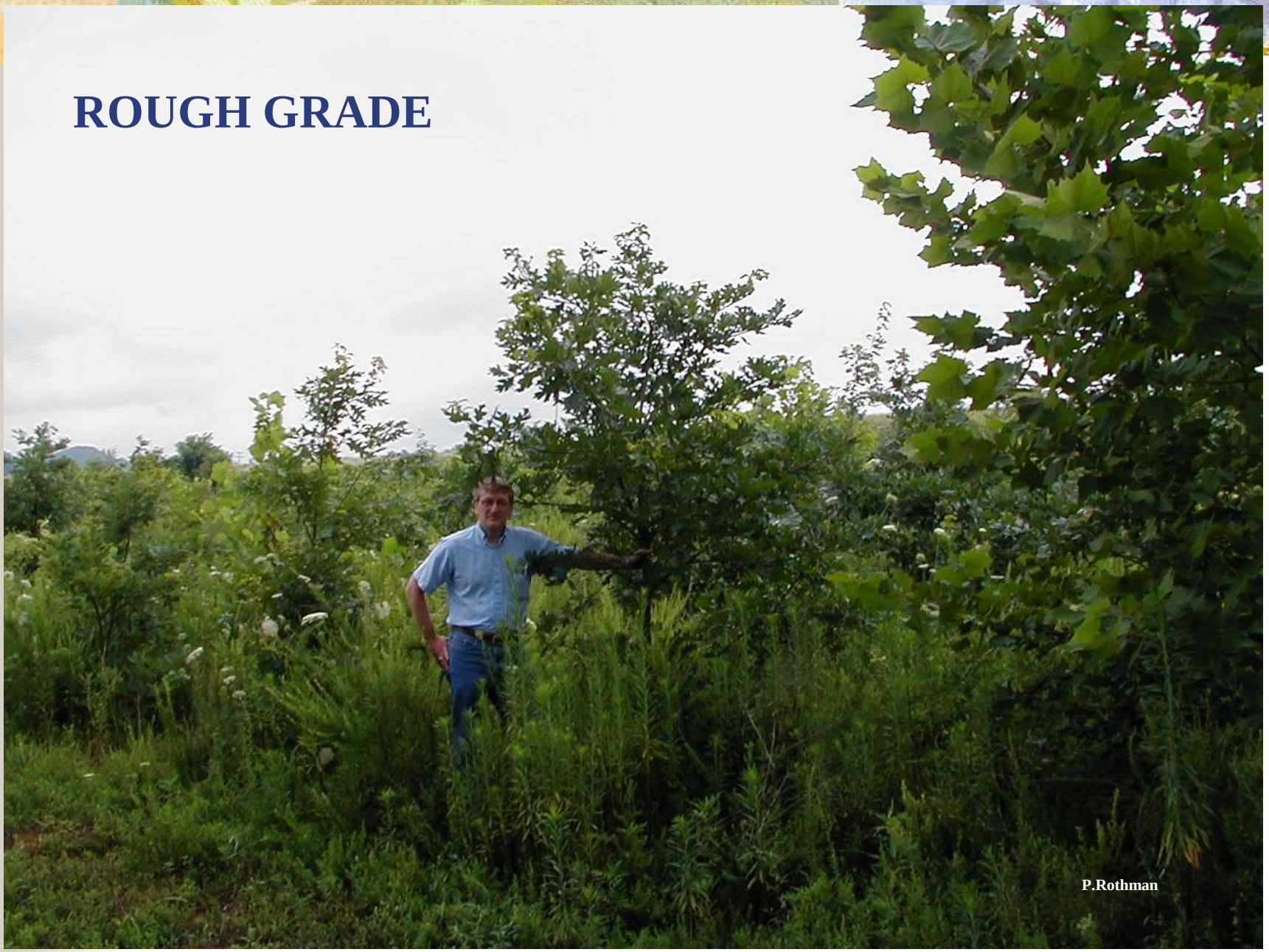

LOOSE DUMPED


P.Rothman


P.Rothman


P.Rothman


P.Rothman


P.Rothman


P.Rothman

Remining

Remining Incentives

Current remining incentives

- Reduced base bond amounts
- Highwall elimination
- Reduced revegetation standards
- Individual NPDES permits(Rahall)
- AML reclamation agreements

Incentives that were not extended in 2004

- Reduced bond liability periods (2 years)
- Unforeseen/unanticipated events

London Regional Office

Jamieson Construction Company

Permit Number : 863 - 0282

Western Kentucky

Peabody Coal Company's

Ken Mine

Permit Number: 898 - 9074

Charolais Coal No. 1, LCC
Permit No. 889

Eastern Kentucky Operations

Stone Mining

Permit Number: 897 - 0085

QUESTIONS?

www.surfacemining.ky.gov/regguidance/rams/