



Enhanced Reclamation Program

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QEP Energy Company

Environmentally Friendly Drilling (EFD) Workshop

Vernal, Utah

Enhanced Reclamation Program

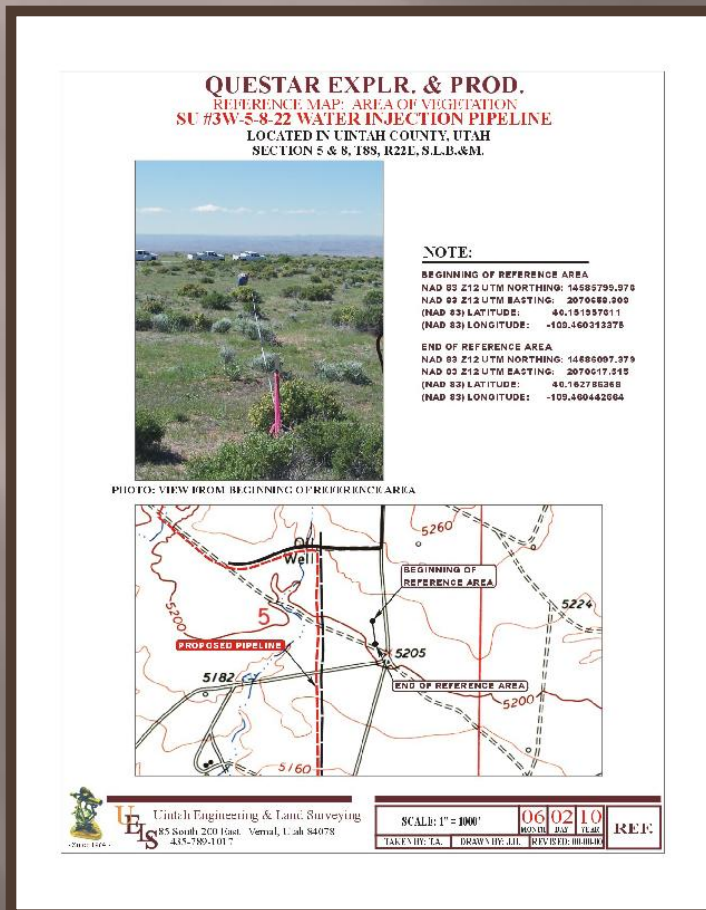


- Reclamation Plan
 - Pre-disturbance Planning
 - Recontour
 - Reclaim
 - Monitor
 - Remediate (when necessary)

Enhanced Reclamation Program

Pre-disturbance Planning

- Reclamation Plan
- Internal Goals
- Reference Sites



Reclamation Process



- Empty and backfill reserve pit

Reclamation Process



- Rip to relieve compaction

Reclamation Process



- Recontour

Reclamation Process



- Spread topsoil

Reclamation Process

- Establish drainage



RW 14-20B

Plugged and Abandoned June 2008

Reclaimed Fall 2008



RW 14-20B

July 6, 2010 2nd Growing Season

Creative Dirt Work and Landscaping

Carefully and strategically placed shot rock and juniper litter.



RW 34-27ADR , Red Wash Field, Uintah County, Utah



FR 9P, Flat Rock Field, Uintah County, Utah



Erosion Control

MHA 1-06-31H

9/21/2010



SCT 6G-12-7-22

Red Wash Field

Uintah County, Utah

P&A Location - Reclaimed 6/2008

Photographed 6/2009 - 1 Growing Season



Snow Fence



Sparks Ridge 1: February 12, 2008

1st winter after fall planting and installing snow fence

Hiawatha, Colorado

Snow Fence



Sparks Ridge 1: July 8, 2008

1st growing season - effects of snow fence

Hiawatha, Colorado



Sparks Ridge 1: June 23, 2009

2nd growing season - effects of snow fence

Hiawatha, Colorado

Soil Amendment: Gypsum

Disced into top 3" of soil.



Straw Mulch

Straw mulch being applied with hay-buster.





Nutrients * Moisture Retention * Erosion Control * Shade

Matting

Matting on steep slopes to help control erosion.



RWS 10ML-5-9-24, Red Wash Field, Uintah County, Utah

Imprinting

Moisture retention and erosion control.



Imprinting



Reclamation Enhancements

2007

2010



Shrub Islands

Sparks Ridge Unit 1, Moffat County, Colorado

Enhanced Seed Mix



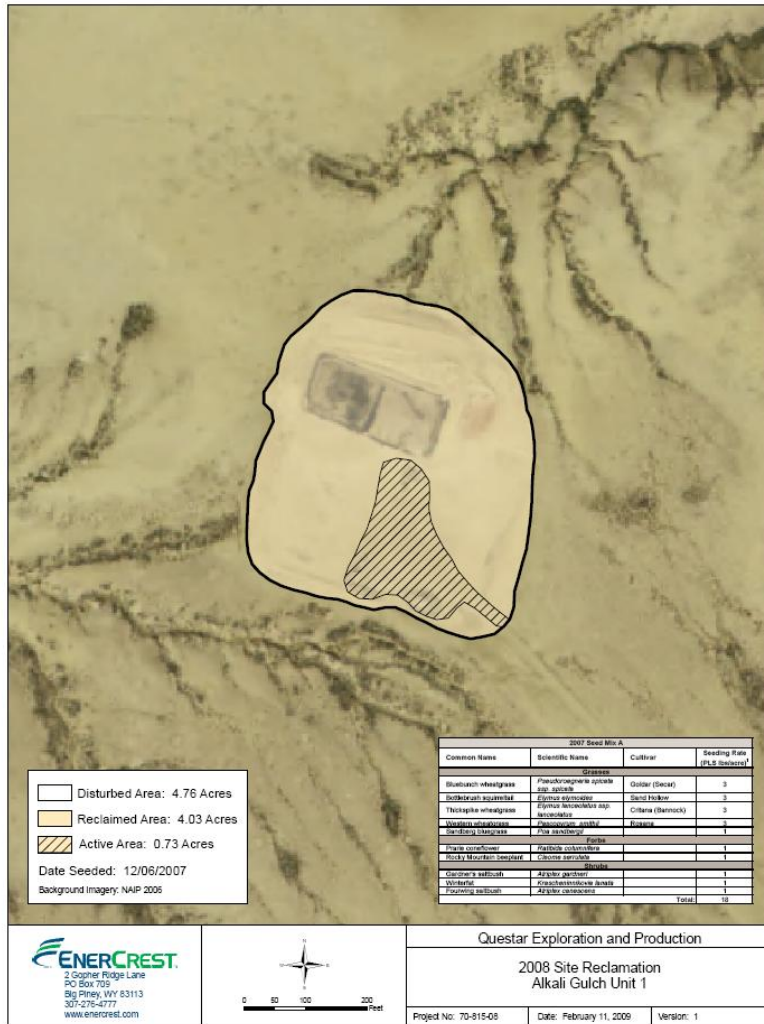
Rocky Mountain Bee Plant, *Cleome serrulata*

Enhanced Seed Mix



Long Term Tracking: Recording

- Record
 - Disturbed area
 - Reclaimed area
 - Active area
 - Seed mix and rate
 - Dates



Long Term Tracking: Monitoring



- Reclamation Map and Information



Seed Mix: 2008 A (CLAY)			
Common Name	Scientific Name	Variety	Lbs PLS
Great Basin Wildrye	<i>Leymus cinereus</i>	Magner or Trailhead	3
Bottlebrush squarreltail	<i>Elymus elymoides</i>	Sand Hollow	3
Thickspike wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lancoelatus</i>	Critana (Bannock)	3
Western wheatgrass	<i>Pascopyrum smithii</i>	Rosana	3
Sandberg bluegrass	<i>Poa sandbergii</i>		3
Rocky mountain beeplant	<i>Cleome serrulata</i>		3
Shadscale saltbush	<i>Atriplex confertifolia</i>		1
Gardner's saltbush	<i>Atriplex gardneri</i>		1
Fourwing saltbush	<i>Atriplex canescens</i>		1
Total Lbs PLS			20

The seed mix rate noted is for drill seeding, the rate will be doubled for broadcast seeding.

Acres disturbed: 3.20 acres
Acres reclaimed: 3.20 acres

 Reclaimed Area
 Disturbed Area


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Questar Exploration and Production

FIGURE 1: SITE RECLAMATION
RW 23-17C
AREA MAP

Project No: 70818

Date: November 13, 2008

Version: 1

Long Term Tracking: Monitoring

- Monitor
 - Site Information
 - Vegetation Assessment
 - On Site and Off Site
 - Other Observations
 - Reclamation Assessment
 - Recommendations

Questar Exploration and
Production Company

QUESTAR

2008 Reclamation Monitoring Report: Dripping Rock 6

Site Information

Date Visited: 7/25/2008
Field: Wamsutter
Status: Interim Reclamation

Total Disturbed Area (ac): 2.46
Active Area (ac): 1
Reclaimed Area (ac): 1.46

Daubenmire Frame Vegetation Assessment

Type	Canopy Cover	
	On Site (%)	Off Site (%)
Grass	2.8	
Forb	0.1	1.1
Shrub	15	7.9
Total	15.1	9
Weed	0.1	
Major Weed Species On Site:		
Halogeton		



Other Observations

Erosion Features: None observed
Erosion Control BMPs: Diversion ditch and surface roughening
Evidence of Grazing: Wildlife
Fencing: None

Reclamation Assessment

Criteria	Current Value	Required Value	Criteria Met
Relative Canopy Cover $= ((\text{On site vegetation cover}) / (\text{Off site vegetation cover})) \times 100$	167.8%	$\geq 70\%$	Yes
Weed Criteria	0.1%	$\leq 10\%$	Yes
Surface Stability Class	Stable	Stable	Yes
Meets Reclamation Criteria			Yes

Recommendations

Site Preparation: No action required.
Weed Control: No weed control recommended.
Seeding: No seeding required.
Erosion Control: No erosion control necessary.
Other: No additional recommendations.

KC HARVEY
Soil & Water Resource Consulting

Opportunities



Enhanced Reclamation = Enhanced Wildlife Habitat

WRU EIH 6MU-25-8-22, Glen
Bench Field, Uintah County, Utah

WV 11AD-14-8-21, Wonsits Valley
Field, Uintah County, Utah



Ponds

Ponds built while reclaiming locations.



Pronghorn at Water Hole

Awareness and Education



Awareness and Education

Reclamation + Functionality



Ditch Perimeter of Production Pad

RW 34-27ADR , Red Wash Field, Uintah County, Utah

Awareness and Education



USU Sociology Department – Field Tour – March 2010

2010 Earth Day Award Winner

- Recognition
 - Utah Division of Oil, Gas, and Mining
 - Uinta Basin Division
 - Enhanced Reclamation Plan



Temporary Footprint



Questions or Comments