

Horsepack Weed Control

Weed control on steep slopes and restricted access sites in the Limestone Hills

RMA Inc.



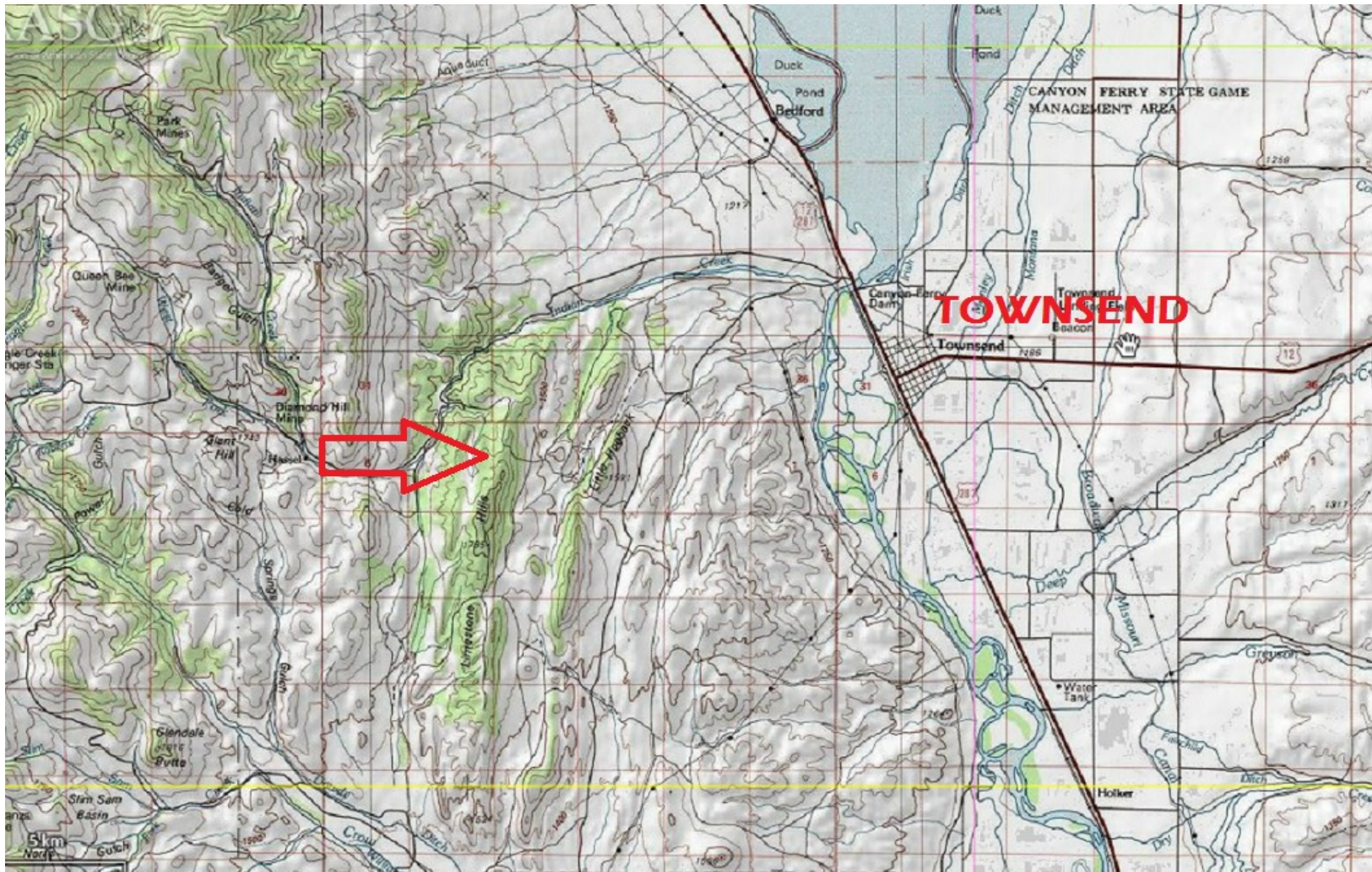
History

- ∞ Since 1992 Resource Management Associates (RMA) Inc. has been providing weed control services for Graymont Western U S Inc. Indian Creek Plant (Graymont).
- ∞ Graymont's permit area encompasses 2000+ acres.

History

- ∞ Shared boundary with the Montana Army National Guard- Limestone Hills Gunnery Range (Guard).
- ∞ RMA Inc. provided both the Guard and Graymont with Horsepack weed spraying in 2013.
- ∞ In 2014 Weave Management acquired RMA Inc. and formed Weave Consulting Inc.

Location



Project Area



Weeds Encountered

Common Name	Scientific Name
Cheatgrass	<i>Bromus tectorum</i>
Dyer's Woad	<i>Isatis tinctoria</i>
Henbane, Black	<i>Hyoscyamus niger</i>
Houndstongue	<i>Cynoglossum officinale</i>
Knapweed: Russian, Spotted	<i>Acroptilon repens</i> , <i>Centaurea stoebe</i>
Mullien, Common	<i>Verbascum Thapsus</i>
Rush Skeletonweed	<i>Chondrilla juncea</i>
Spurge, Leafy	<i>Euphorbia esula</i>
Thistle: Bull, Canadian, Musk	<i>Cirsium vulgare</i> , <i>arvense</i> , <i>Carduus nutans</i>
Toadflax, Dalmation	<i>Linaria dalmatica</i>

Chemicals used

Chemicals	Adjuvant, Surfactant, Dye
Tordon 22K	Brimstone (Fertilizer)
Chaparral	Syltac (sticker)
Perspective	HiLight (Dye)
Escort	
2,4-D	
Milestone	
ForeFront	

Weed Control Strategy

1. Pathways for weed transportation such as roads, trails and wash areas.
2. Reclamation and other main areas.
3. Secondary infestation areas
4. Re-inspection and application of all areas during the year.

∞ **Each step must be followed for successful weed control**

Challenges

- ∞ Lack of close water supply.
- ∞ 1,400 slope feet of rocky 2:1 hillside with no access.
- ∞ Active military range and mining areas
- ∞ 10-20% bare ground allows easy weed propagation.

Unexploded Ordnance

- ∞ Unexploded Ordnance (UXO)
- ∞ Graymont claims area contaminated with UXO from historical guard training activities 1948-1960's.
- ∞ Claims area being cleared by the Guard since 1998.

Unexploded Ordnance

- ∞ Presently weed control activities extend into un-cleared contaminated areas.
- ∞ RMA personnel trained and experienced with this hazard.
- ∞ **Watch your feet, don't touch and report.**
- ∞ Range is still being used and weed control personnel must be familiar with safety and radio procedures.

76mm High Explosive - fuzed



81mm Mortar



Tail Assembly from 3.5 inch Rocket



40mm Grenade

∞ Non historical contamination.



ATV Spraying

- ∞ 6x6 Polaris Ranger with 55 gallon tank and 200 feet of hose.
- ∞ Used for roadways on the mine, trail and off-road
- ∞ 55 gallon tank makes Ranger top heavy.
- ∞ Highly effective method with large capacity and capability.

Add picture of ranger sprayer in terrain



Backpack Spraying

- ☞ Useful for areas not accessible by Ranger or hose; reclaimed exploration roads, steep slopes, talus slopes.
- ☞ 3-4 gallon capacity, hand pump pressurized, adjustable nozzle.
- ☞ Fringe areas where backpack could be used are of a lower priority compared to reclamation and main areas.

Saddle Light Horsepack System



Saddle-light

- ∞ In 2012 RMA started its horsepack weed spraying operation utilizing the Saddle-light system developed by the Blanco Ranger District in Meeker, CO for the White River National Forest (Tom McClure).
- ∞ For more information contact Matt Scott@ 970-878-9670 or mScott@co.rio-blanco.co.us

Saddle-light

- ∞ It is a significant increase in efficiency from backpack spraying. A two man horsepack team can cover more than 3 times the amount of acreage compared to backpacks alone.
- ∞ Recent comparisons of horsepack versus backpack spraying in the White River National Forest have shown horsepack spraying to have over 3.3 times the coverage potential with much less physical requirement.

A horse named Bill





Saddle-light

- ∞ Four 5 gallon soda kegs that are carried in aluminum frame panniers.
- ∞ Using standard pack saddles and harness.
- ∞ Filled with premixed chemical or filled with water and then mixed.
- ∞ Pressurized with a CO² cylinder carried in the pack.

Saddle-light

- ∞ Both the CO² and spray nozzle are regulated so that pressure and flow can be altered to optimize the per acre rate, spray pattern, weed density, and weather conditions.
- ∞ Calibration follows the standard 18.5 foot x 18.5 foot square method (1/128th of an acre).



Experience

- ∞ Saddle-light system opens up areas that were not previously cost effective to spray.
- ∞ Weed free hay is used during operation.
- ∞ Effects of high heat and water for horses must be considered.
- ∞ Operators must be experienced with horses. New risks involved with the use of horses.

Grey Grey



Lessons Learned

Safety

- ☞ Healthy, reliable, and tested horses are a must
- ☞ When a horse stumbles or falls, it goes downhill: always stay above the horse
- ☞ If the terrain doesn't look passable for horses DO NOT ATTEMPT APPLICATION.
- ☞ To work safely, horses need to be well fed and need plenty of water, especially in hot weather
- ☞ First aid training and supplies for humans and horses are a must in the field

Lessons Learned

Application

- ∞ Due to the remote spray locations, efficiency is extremely important
- ∞ When working in remote locations, locate the staging area (water source) in the most convenient location possible so as to minimize refill times
- ∞ Refill with natural water sources to minimize trips back to staging area

Questions?

