

Appendix F

Huntington Valley Integrated Weed Management Plan

**U.S. Department of the Interior
Bureau of Land Management**

INTEGRATED WEED MANAGEMENT PLAN

**Noble Energy Inc.
Huntington Valley Oil and Gas Exploration Project**

May 2014

Location: Elko County, Nevada

PREPARED FOR:

U.S. Department of the Interior
Bureau of Land Management
Elko District Office
3900 East Idaho Street
Elko, NV 89801
(775) 753-0200
(775) 753-034

TABLE OF CONTENTS

1.0	Introduction.....	1
2.0	Weed Management	1
2.1	Prevention	2
2.2	Monitoring	3
2.3	Reclamation	4
2.4	Treatment.....	4

TABLE

Table 1.	Category A, B and C noxious weeds listed by the state of Nevada.....	5
----------	--	---

1.0 INTRODUCTION

Noble Energy Inc. (Noble) is exploring oil and gas prospects in the Huntington Valley Project Area near Jiggs, Elko County, Nevada, on lands partially managed by the Bureau of Land Management (BLM). To comply with BLM requirements, a landscape weed management plan has been developed for this area.

The term “weed” has many definitions, one of the broadest being that used by the Nevada BLM, which defines a weed in the words of J.M. Torell as “a plant that interferes with management objectives for a given area of land at a given point in time” (BLM, 2013a). By this definition, invasive plants such as Cheatgrass or Halogeton are considered weeds. The term “noxious weed” is a legally defined term and is used to describe non-native, highly invasive plants that are detrimental to native communities. In Nevada, noxious weeds are defined as “any species of plant which is, or likely to be, detrimental or destructive and difficult to control or eradicate.”

There are 48 noxious weed species in Nevada, grouped into three categories (Table 1). Category A species currently have limited distribution in the state, since control of these species is considered feasible, the State requires eradication wherever they are found. Category B species are already established in limited areas of Nevada. Category C weeds are widespread and well established throughout many counties of the State.

2.0 WEED MANAGEMENT

Noble is committed to controlling the spread of noxious weeds on the lands where they will be operating. All Category A species will be eradicated whenever it is located. Category B and C weeds will be controlled where operations are planned or where they become established as a result of project activities. If weeds become established outside of the operations boundaries as a result of project activities, Noble will treat these infestations as well. Prevention of weed species will be a primary management option. Successful reclamation of disturbed areas will be another primary method to control these species through competition with desirable perennial species. If weeds become established, herbicides will be the preferred treatment method (refer to Section 2.4).

In addition to noxious weeds, there are several non-native, non-desirable species with invasive properties that are common in Nevada, referred to in this document as “invasive weeds”. Efforts will be made to prevent and control invasive weeds such as cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) that are likely to occur in the Project Area. The primary management strategies for these species will be prevention and revegetation, however, herbicide or other treatment may occur if these species are impeding successful reclamation (refer to Section 2.4).

The following goals have been identified in the Huntington Valley Project Area: 1) prevent the spread of noxious and invasive weeds, 2) inventory and monitor noxious weeds pre-disturbance and throughout the life of the project, 3) encourage plant communities that are resistant to weed invasion through reclamation of disturbed areas, and 4) treat any noxious weed with approved

and properly documented herbicides. Management strategies have been developed in order to help meet each goal.

2.1 PREVENTION

Preventing the spread of noxious and invasive weeds will be the most important component of Noble's weed management program. This will be accomplished using the following Best Management Practices (BMPs):

- During the Construction/Drilling and Reclamation/Abandonment Phases Noble will develop a 'sticker' program to identify all vehicles and equipment that have successfully been cleared of noxious weeds. Vehicles and equipment without the proper stickers will be barred from entering new areas until cleaned of noxious weeds. During the Production/Operations Phase this program will not be necessary because all vehicles will be staying on established roads. If during the Production/Operations Phase, Noble needs to operate vehicles in an off-road capacity, the project manager will need to ensure that each vehicle is washed prior to off-road travel.
- In areas where infestations are identified in the field, Noble will stockpile cleared vegetation and salvaged topsoil adjacent to the area from which they were stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. Weed-infested stockpiles will be marked with clearly visible flagging until reclamation, when Noble will return topsoil and vegetative material from infestation sites to the areas from which they were stripped. In addition, Noble will not be permitted to move soil and vegetative matter outside the identified and marked noxious weed infestation areas.
- During construction, Noble will dedicate one piece of equipment to excavate weed affected soils for stockpiling and for backfill of weed-affected soils. The equipment may be used elsewhere on the project after washing.
- Noble will educate all Project personnel regarding environmental concerns and requirements, including weed identification, prevention, and control methods. No personnel will be allowed to enter the Project Area before taking part in the pre-construction environmental information meeting at any point during the Project. Qualified environmental inspectors approved by BLM will be used to conduct the pre-construction environmental information meeting and conduct on-site biological monitoring before and during construction and reclamation, and annually during operation.
- All vehicles and equipment that will travel off approved/designated transportation routes or that will be utilized during the Construction/Drilling or Reclamation/Abandonment Phases will be cleaned to prevent the spread of seeds and propagules. Cleaning will be carried out using power or high-pressure equipment to remove seeds, roots, and rhizomes from the equipment before transport into the Project Area. Cleaning will concentrate on tracks or tires and on the undercarriage, with special emphasis on axles, frames, cross members, motor mounts, the underside of running boards, and front bumper/brush guard

assemblies. All vehicle and equipment cleaning will occur off-site with two exceptions: 1) the heavy equipment utilized to remove the noxious weed infested dirt can be washed at the location where the soil was removed with the location being reported to the BLM and 2) on-site cleaning may be conducted if a system capable of collecting all of the dirt and debris for off-site disposal is provided. This process will be required whenever vehicles/equipment that have previously been used on private lands are entering BLM lands. It will also be required prior to any off-road activities.

- Early detection will be completed through the reporting and prompt treatment of weed infestations, particularly Category A species. Weed identification pamphlets, available from the Nevada Department of Agriculture or the BLM, will be made available to Noble employees in the field.
- If weeds are located in an area proposed for development, they will be treated prior to ground disturbance. This may involve herbicide, or mechanical removal (refer to Section 2.4).
- Noble will ensure that straw or hay bales used for sediment barrier installations or mulch distribution are weed-free. If weed-free bales are unavailable, alternative weed free sediment barrier installations such as coir logs will be utilized. These weed free products will be certified by the Nevada Department of Agriculture or by another state's agriculture agency with approval from the BLM.
- All gravel utilized during Construction/Drilling and Production/Operations Phases will be certified weed-free by the Nevada Department of Agriculture. Information on this certification can be found at:
http://agri.nv.gov/Plant/Noxious_Weeds/Programs_CertifiedWeedFree_Gravel/.
If weed-free gravel is unavailable, gravel will be sourced from a pit that has been inspected to be free of all noxious weeds. This pit will be inspected on an annual basis to ensure that it remains weed-free. If noxious weeds are found during the annual inspection, they will be treated immediately to maintain the weed-free status.

2.2 MONITORING

Monitoring of noxious weeds will occur on all development sites throughout the life of the project. This will allow for prompt treatment of any new infestations, and will involve the following strategies:

- Noxious weeds will be inventoried on each project site prior to disturbance. Spatial data will be collected for all noxious weeds located.
- Following ground-disturbance, noxious weed monitoring will be conducted on an annual basis for the life of the project. Monitoring may be conducted concurrently to treatment in areas where weed infestations are not significant.

- Invasive weeds will be documented spatially when present in limited quantities, using methods in coordination with the BLM, which will be developed in the near future for the submittal of the site-specific weed management plan. If large infestations occur, the extent of the population will be described during pre-disturbance surveys and monitoring.
- Noble will conduct yearly noxious weed inventories in areas that have been disturbed as a result of project-related activities. These inventories will continue for the life of the project and until reclamation success has been achieved as described in the reclamation plan.

2.3 RECLAMATION

Reclamation is an important component of weed management, as re-vegetation of disturbed areas with a native plant community will provide competition, and reduce the habitat available for early colonizers such as noxious weeds. The following BMPs will be implemented:

- Reclamation activities will include certified weed-free seed mixes, approved by the BLM or surface owner.
- All materials used for reclamation (i.e. mulch, straw, etc.) will also be certified weed-free by the Nevada Department of Agriculture or by another state's agriculture agency with approval from the BLM.
- Noble will ensure that straw or hay bales used for sediment barrier installations or mulch distribution are certified weed-free. If weed-free bales are unavailable, alternative weed free sediment barrier installations such as coir logs will be utilized. These weed-free products will be certified by the Nevada Department of Agriculture or by another state's agriculture agency with approval from the BLM.
- Noble will reclaim and seed all disturbed ground concurrent with ground disturbing activities in accordance with the Reclamation Plan (Appendix C of the EA). Monitoring for reclamation success will ensure adequate vegetative cover to prevent the invasion of noxious weeds.

2.4 TREATMENT

Noxious weeds will be treated promptly whenever they are located on a project site and in accordance with existing Nevada Department of Agriculture regulations and BLM requirements. The treatment strategy will differ depending on the species and its growth habit. Integrated Weed Management (IWM) will be utilized on this project and, depending on the weed manual, chemical, and biological control will be utilized. Through prompt treatment, Noble will prevent any noxious weeds from becoming established and spreading into the adjacent environments.

- Specific BLM requirements that guide weed treatment include (but are not limited to):
 - Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands (BLM, 1998)

- Noxious Weed Treatment DNA (BLM, 2011)
 - 9011 Chemical Pest Control Manual (BLM, 2013b)
 - 9015 Integrated Weed Management Manual (BLM, 2007)
- Small infestations are likely to be locally treated with herbicide applications, with a focus on treating individual plants. In the event that a large infestation occurs or reoccurs, an evaluation will be performed to determine what led to the infestation and a new strategy may be implemented.
 - In cooperation with the BLM Noxious Weed Specialist, Noble will refine/revise the Noxious Weed Management Plan (NWMP) as necessary to address site and species specific treatments.
 - Category A species will be treated promptly and eradicated whenever they are located. Chemical control will be the primary treatment method.
 - Category B and List C species will be treated whenever they are located. Chemical and/or mechanical treatments may be used.
 - Invasive species not listed as noxious will be monitored, and will be treated in areas where they are impeding reclamation. Chemical and/or mechanical treatments may be used.
 - Chemical treatment refers to the use of BLM-approved herbicides. Experienced certified herbicide applicators (certified by the Nevada Department of Agriculture) will be contracted for chemical treatment of weeds. Appropriate Pesticide Application Records and Pesticide Use Proposals will be completed for all areas to be treated, if required by the BLM. All applications will be under the supervision of a BLM licensed specialist.
 - Mechanical treatment refers to the use of mowing, tilling, or hand pulling weeds. This method may be considered for species such as Scotch thistle that have one apical growth point, particularly early in the growing season.
 - Biological control refers to the use of insects, bacteria, or other organisms specialized to kill or impede reproduction of weed species. This method will not be considered as an option in the Project Area unless requested by the BLM.

Table 1
Category A, B and C Noxious Weeds Listed by the State of Nevada

	Common Name	Scientific Name
Category A	African Rue	<i>Peganum harmala</i>
	Austrian fieldcress	<i>Rorippa austriaca</i>
	Austrian peaweed	<i>Sphaerophysa salsula / Swainsona salsula</i>
	Black henbane	<i>Hyoscyamus niger</i>
	Camelthorn	<i>Alhagi camelorum</i>
	Common crupina	<i>Crupina vulgaris</i>
	Dalmation Toadflax	<i>Linaria dalmatica</i>

	Common Name	Scientific Name
	Dyer's woad	<i>Isatis tinctoria</i>
	Eurasian water-milfoil	<i>Myriophyllum spicatum</i>
	Giant Reed	<i>Arundo donax</i>
	Giant Salvinia	<i>Salvinia molesta</i>
	Goats rue	<i>Galega officinalis</i>
	Green Fountain grass	<i>Pennisetum setaceum</i>
	Houndstongue	<i>Cynoglossum officinale</i>
	Hydrilla	<i>Hydrilla verticillata</i>
	Iberian Starthistle	<i>Centaurea iberica</i>
	Klamath weed	<i>Hypericum perforatum</i>
	Malta Star thistle	<i>Centaurea melitensis</i>
	Mayweed chamomile	<i>Anthemis cotula</i>
	Mediterranean sage	<i>Salvia aethiopsis</i>
	Purple loosestrife	<i>Lythrum salicaria, L.virgatum and their cultivars</i>
	Purple Star thistle	<i>Centaurea calcitrapa</i>
	Rush skeletonweed	<i>Chondrilla juncea</i>
	Sow Thistle	<i>Sonchus arvensis</i>
	Spotted Knapweed	<i>Centaurea masculosa</i>
	Squarrose knapweed	<i>Centaurea virgate</i>
	Sulfur cinquefoil	<i>Potentilla recta</i>
Category B	Syrian Bean Caper	<i>Zygophyllum fabago</i>
	Yellow Starthistle	<i>Centaurea solstitialis</i>
	Yellow Toadflax	<i>Linaria vulgaris</i>
	Carolina Horse-nettle	<i>Solanum carolinense</i>
	Diffuse Knapweed	<i>Centaurea diffusa</i>
	Leafy spurge	<i>Euphorbia esula</i>
	Medusahead	<i>Taeniatherum caput-medusae</i>
	Musk Thistle	<i>Carduus nutans</i>
Category C	Russian Knapweed	<i>Acroptilon repens</i>
	Sahara Mustard	<i>Brassica tournefortii</i>
	Scotch Thistle	<i>Onopordum acanthium</i>
	White Horse-nettle	<i>Solanum elaeagnifolium</i>
	Canada Thistle	<i>Cirsium arvense</i>
	Hoary cress	<i>Cardaria draba</i>
	Johnson grass	<i>Sorghum halepense</i>
	Perennial pepperweed	<i>Lepidium latifolium</i>
Poison Hemlock	<i>Conium maculatum</i>	
	Puncture vine	<i>Tribulus terrestris</i>
	Salt cedar (tamarisk)	<i>Tamarix spp</i>
	Water Hemlock	<i>Cicuta maculata</i>

References

Bureau of Land Management. 1998. Programmatic Environmental Assessment of Integrated Weed Management on Bureau of Land Management Lands. BLM/EK/PL-98/006, March 20.

Bureau of Land Management. 2007. BLM Manual 0-15 – Integrated Weed Management. Accessed online at: www.blm.gov/ca/st/en/prog/weeds/9015.html. April 26.

Bureau of Land Management. 2011. Determination of NEPA Adequacy (DNA). Integrated Weed Management Program Pesticide Use Proposal Renewal. DOI-BLM-CA-N020-2011-0017-DNA. March.

Bureau of Land Management. 2013a. Noxious Weeds and INvasive Species. Accessed online at: www.blm.gov/nv/st/en/prog/more_programs/invasive_species.html. December 13.

Bureau of Land Management. 2013b. BLM Manual 9011 - Chemical Pest Control. Accessed online: www.blm.gov/ca/st/en/prog/weeds/9011.html. October 24.