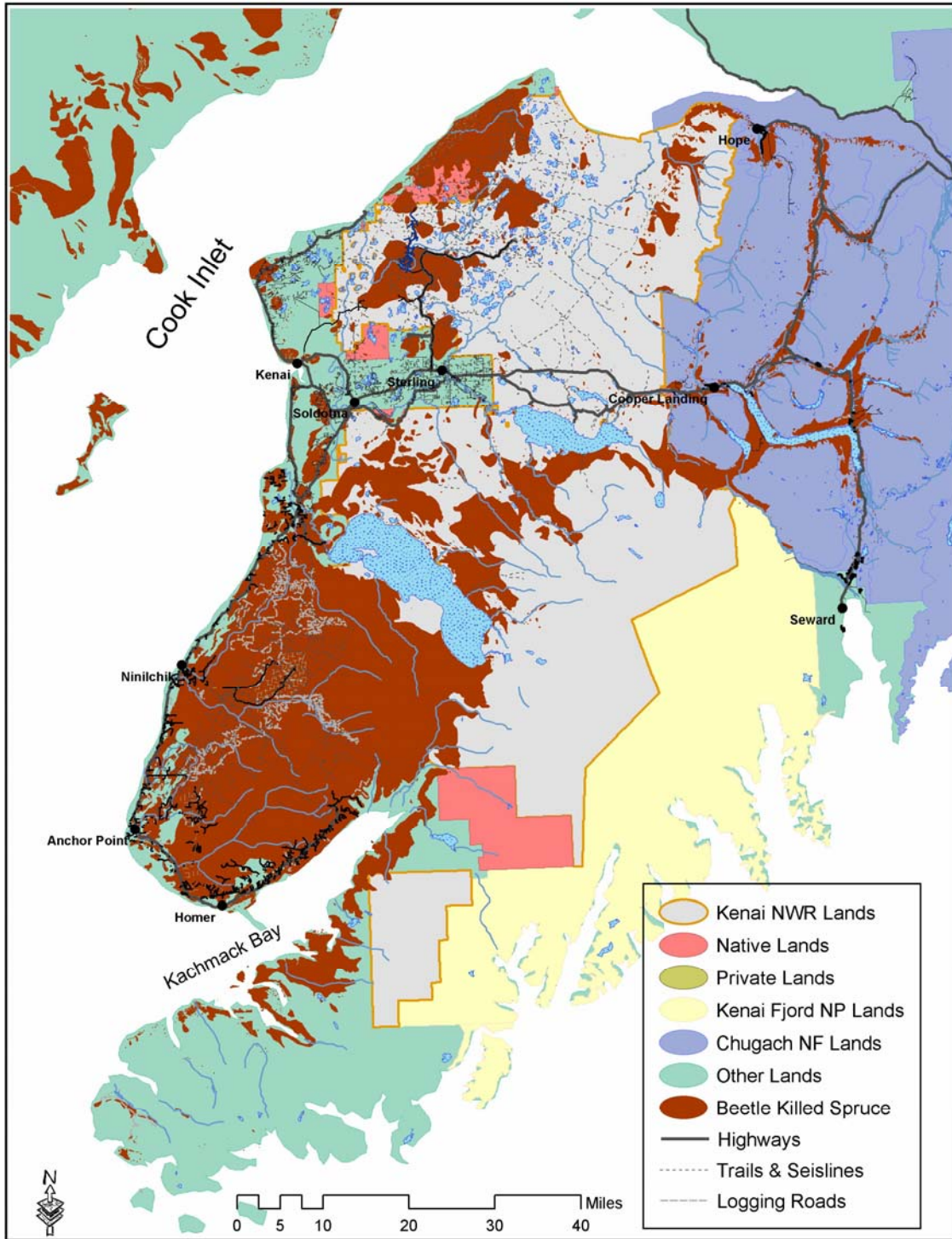


HACCP Plan_Swanson River Road grader operations

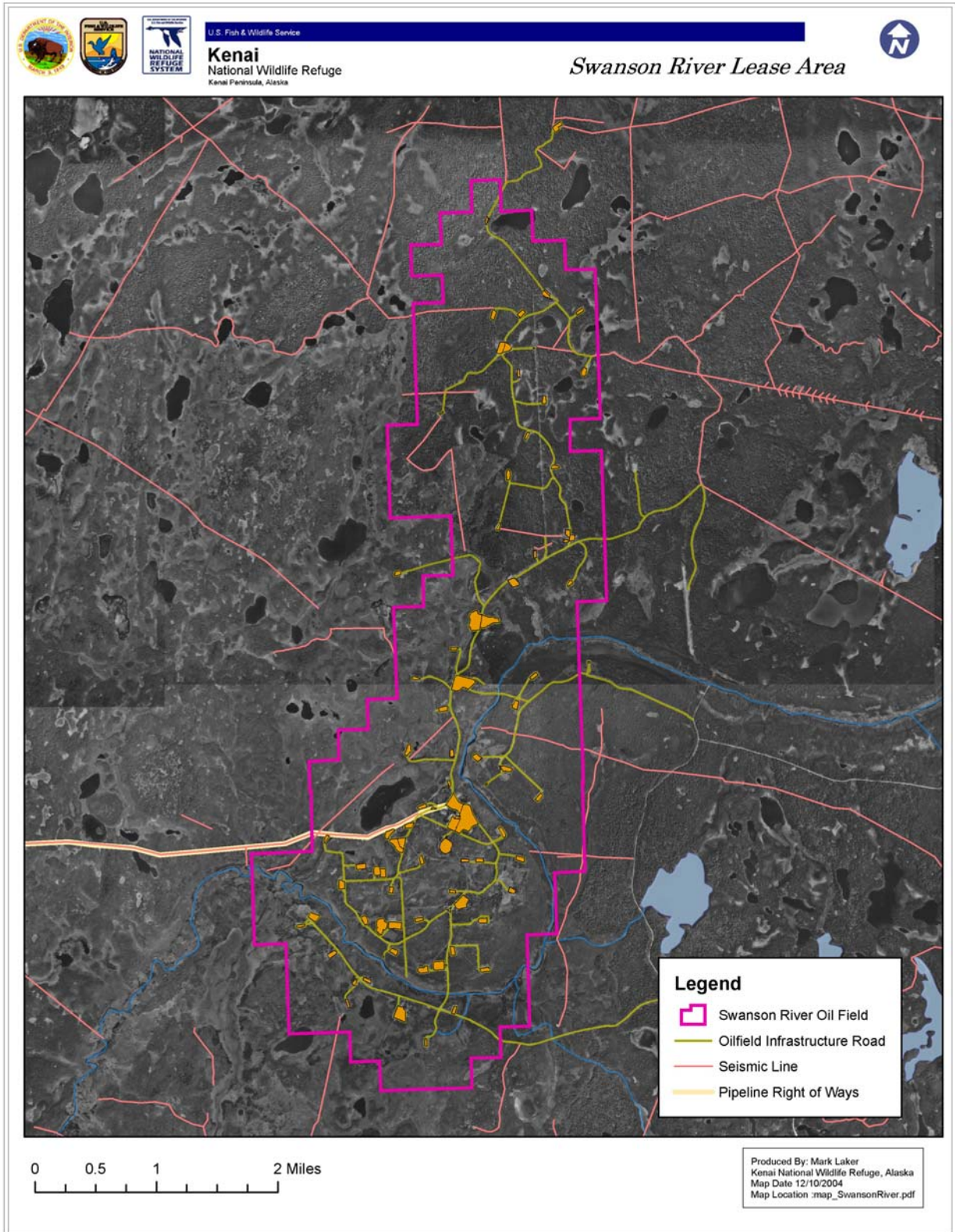
HACCP Step 1 - Activity Description	
Facility: Kenai National Wildlife Refuge	Site: Swanson River Oil & Gas Unit
Project Coordinator: Claire Caldes	Project Description: commercial operations
Site Manager: Greg Merle	
Address: PO Box 2139 Soldotna, AK 99669	
Phone: 907-262-7021	

Project Description (Who, What, Where, When, How & Why)
<p>The Swanson Unit has been in existence since 1957. It is currently operated by Union Oil Company of California. The 8000 acre leased area includes 65 drill pads, 35 miles of gravel road, 3 gravel pits, several buildings, and several miles of seismic lines, utility right of ways, and pipelines. There are two bridges with open grates that cross the Swanson River, a significant anadromous stream that flows into the Cook Inlet. The 17-mile Swanson River Road was constructed to access the unit. In addition to industrial vehicles, the Swanson River Road is currently the primary thoroughfare for public vehicular access to the Swanson and Swan Lake canoe systems within Congressionally-designated Wilderness. The road is hydro-axed along the right-of-way and the road surface is routinely graded by equipment operated by a local contractor. The concern is that not only are exotic, invasive plants spreading throughout the unit, but they may spread down the Swanson/Swan Lake road into the canoe system. Also, chytrid fungus has been documented in wood frogs collected along the Swanson Road, one of two places in Alaska.</p>

HACCP Plan_Swanson River Road grader operations



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Scientific Name	Site Count n=269	Sites Infested %	Oil/Gas Pads n=34	Pipe Lines n=10	Roads n=139	Seismic Lines n=22
Taraxacum officinale ssp. officinale	186	69.14	26	8	104	5
Trifolium hybridum	162	60.22	31	5	98	6
Matricaria discoidea	109	40.52	17	0	58	3
Plantago major	99	36.80	24	5	30	3
Alopecurus pratensis	85	31.60	19	1	45	4
Poa pratensis	56	20.82	8	1	30	2
Elymus repens	53	19.70	15	0	27	2
Phleum pretense	51	18.96	2	2	28	1
Crepis tectorum	47	17.47	23	7	5	2
Polygonum aviculare	45	16.73	6	0	30	0
Trifolium repens	40	14.87	0	3	16	0
None found	39	14.50	0	1	10	12
Cerastium fontanum ssp. Vulgare	30	11.15	0	1	17	0
Hordeum jubatum	26	9.67	21	0	3	0
Chenopodium album	23	8.55	1	0	19	0
Poa annua	15	5.58	0	0	5	1
Phalaris arundinacea	14	5.20	3	0	8	0
Capsella bursa-pastoris	12	4.46	1	0	2	0
Potentilla norvegica	11	4.09	6	2	1	0
Poa compressa	10	3.72	2	0	4	0
Trifolium pretense	8	2.97	4	1	1	0
Spergularia rubra	6	2.23	2	0	1	0
Bromus inermis ssp. inermis	6	2.23	0	0	4	0
Melilotus alba	5	1.86	5	0	0	0
Poa trivialis	5	1.86	4	0	0	0
Rumex acetosella	3	1.12	3	0	0	0
Lolium perenne ssp. multiflorum	3	1.12	1	0	0	1
Linaria vulgaris	1	0.37	1	0	0	0
Hieracium caespitosum	1	0.37	1	0	0	0
Hieracium umbellatum	1	0.37	1	0	0	0
Rumex crispus	1	0.37	1	0	0	0
Achillea ptarmica	1	0.37	1	0	0	0
Chenopodium berlandieri	1	0.37	1	0	0	0
Elymus sibiricus	1	0.37	0	0	1	0

HACCP Plan_Swanson River Road grader operations

HACCP Step 2 - Potential Hazard Identification

Vertebrates:

Invertebrates:

Plants:

Hieracium spp.
Melilotus spp.
reed canary grass
quack grass
Typha spp.

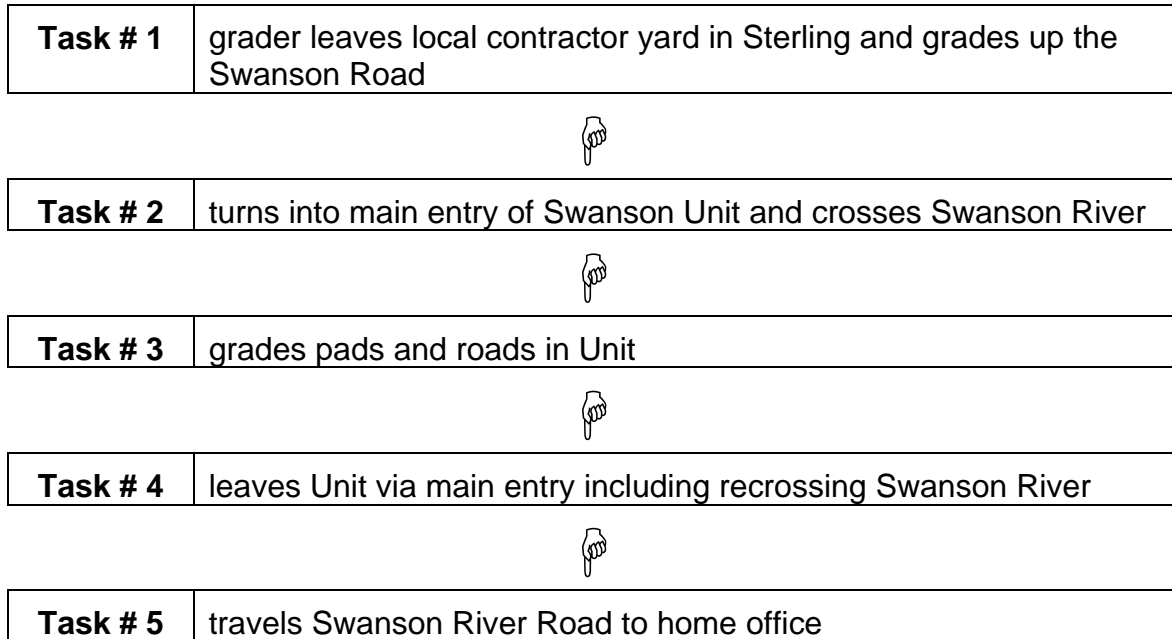
Other Biologics:

chytrid fungus

Others:

HACCP Plan_Swanson River Road grader operations

HACCP Step 3 - Flow Diagram



HACCP Plan_Swanson River Road grader operations

HACCP Step 4 – Hazard Analysis					
Task	Hazard	Probable?	Justification	Control Measures	CCP?
grader leaves local contractor yard in Sterling and grades up the Swanson Road	Other Biologic: chytrid fungus	Yes	Already know to occur in local wood frog population and road construction is major vector	power washing grader; consider fungicide	No
	Plant: Hieracium spp.	Yes	known to occur in Sterling	power washing	No
	Plant: Melilotus spp.	No	not known to occur in Sterling		No
	Plant: reed canary grass	No	not known to occur in Sterling		No
	Plant: quack grass	Yes	known to occur in Sterling	power washing grader	No
	Plant: Typha spp.	No	not known to occur in Sterling		No
turns into main entry of Swanson Unit and crosses Swanson River	Other Biologic: chytrid fungus	Yes	already know to occur in local wood frog population and road construction is major vector	power washing grader; consider fungicide	No
	Plant: Hieracium spp.	Yes	known to occur in Sterling	power washing grader	No
	Plant: Melilotus spp.	No	not known to occur in Sterling		No

HACCP Plan_Swanson River Road grader operations

	Plant: reed canary grass	No	not known to occur in Sterling		No
	Plant: quack grass	Yes	known to occur in Sterling	power washing	No
	Plant: Typha spp.	No	not known to occur in Sterling		No
grades pads and roads in Unit	Other Biologic: chytrid fungus	Yes	already know to occur in local wood frog population and road construction is major vector	power washing grader; consider fungicide	No
	Plant: Hieracium spp.	Yes	known to occur in Swanson River Unit	power washing grader	No
	Plant: Melilotus spp.	Yes	known to occur in Swanson River Unit	power washing grader	No
	Plant: reed canary grass	Yes	known to occur in Swanson River Unit	power washing grader	No
	Plant: quack grass	Yes	known to occur in Swanson River Unit	power washing grader	No
	Plant: Typha spp.	Yes	known to occur in Swanson River Unit	power washing grader	No
leaves Unit via main entry including recrossing Swanson River	Other Biologic: chytrid fungus	Yes	already know to occur in local wood frog population and road construction is major vector	power washing grader; consider fungicide	No
	Plant: Hieracium spp.	Yes	known to occur in	power washing	Yes

HACCP Plan_Swanson River Road grader operations

			Swanson River Unit	grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath	
	Plant: Melilotus spp.	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath	Yes
	Plant: reed canary grass	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath	Yes
	Plant: quack grass	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath	Yes
	Plant: Typha spp.	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath	Yes

HACCP Plan_Swanson River Road grader operations

travels down Swanson River Road to home office	Other Biologic: chytrid fungus	Yes	already know to occur in local wood frog population and road construction is major vector	power washing grader; consider fungicide	Yes
	Plant: Hieracium spp.	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath, minimize maintenance on roadside ROW (currently 10-12')	No
	Plant: Melilotus spp.	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath, minimize maintenance on roadside ROW (currently 10-12')	No
	Plant: reed canary grass	Yes	known to occur in Swanson River Unit	power washing grader, cattle grate to capture seeds, resurface grated	No

HACCP Plan_Swanson River Road grader operations

				bridge or put apron underneath, minimize maintenance on roadside ROW (currently 10-12')	
	Plant: quack grass	Yes		power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath, minimize maintenance on roadside ROW (currently 10-12')	No
	Plant: Typha spp.	Yes	known to occur in Swanson River Unit	eliminate it in the xylene remediation ponds	No

HACCP Plan_Swanson River Road grader operations

HACCP Step 5 - HACCP Plan

Critical Control Point #1:

Task # 4: leaves Unit via main entry including recrossing Swanson River

Significant Hazards:

Plant: Hieracium spp.

Control Measures:

power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath

Limits for Control Measures:

rinse for >15 min until all visible dirt clods and vegetation are gone

Monitoring: What?

power washing the grader

Monitoring: How?

visual inspection

Monitoring: Frequency?

every time the grader is used

Monitoring: Who?

3rd party contractor (Kenai Soil and Water Conservation District)

Evaluation & Corrective Actions:

manual scrubbing

Supporting Documentation: invasive species management plan, AKEPIC, CNIPM

Critical Control Point #2:

Task # 4: leaves Unit via main entry including recrossing Swanson River

Significant Hazards:

Plant: Melilotus spp.

Control Measures:

power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath

Limits for Control Measures:

rinse for >15 min until all visible dirt clods and vegetation are gone

Monitoring: What?

power washing the grader

Monitoring: How?

visual inspection

Monitoring: Frequency?

every time the grader is used

HACCP Plan_Swanson River Road grader operations

<p>Monitoring: Who? 3rd party contractor (Kenai Soil and Water Conservation District)</p>
<p>Evaluation & Corrective Actions: manual scrubbing</p>
<p>Supporting Documentation: invasive species management plan, AKEPIC, CNIPM</p>
<p>Critical Control Point #3: Task # 4: leaves Unit via main entry including recrossing Swanson River</p>
<p>Significant Hazards: Plant: reed canary grass</p>
<p>Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath</p>
<p>Limits for Control Measures: rinse for >15 min until all visible dirt clods and vegetation are gone</p>
<p>Monitoring: What? power washing the grader</p>
<p>Monitoring: How? visual inspection</p>
<p>Monitoring: Frequency? every time the grader is used</p>
<p>Monitoring: Who? 3rd party contractor (Kenai Soil and Water Conservation District)</p>
<p>Evaluation & Corrective Actions: manual scrubbing</p>
<p>Supporting Documentation: invasive species management plan, AKEPIC, CNIPM</p>
<p>Critical Control Point #4: Task # 4: leaves Unit via main entry including recrossing Swanson River</p>
<p>Significant Hazards: Plant: quack grass</p>
<p>Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath</p>
<p>Limits for Control Measures: rinse for >15 min until all visible dirt clods and vegetation are gone</p>

HACCP Plan_Swanson River Road grader operations

<p>Monitoring: What? power washing the grader</p>
<p>Monitoring: How? visual inspection</p>
<p>Monitoring: Frequency? every time the grader is used</p>
<p>Monitoring: Who? 3rd party contractor (Kenai Soil and Water Conservation District)</p>
<p>Evaluation & Corrective Actions: manual scrubbing</p>
<p>Supporting Documentation: invasive species management plan, AKEPIC, CNIPM</p>
<p>Critical Control Point #5: Task # 4: leaves Unit via main entry including recrossing Swanson River</p>
<p>Significant Hazards: Plant: Typha spp.</p>
<p>Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath</p>
<p>Limits for Control Measures: rinse for >15 min until all visible dirt clods and vegetation are gone</p>
<p>Monitoring: What? power washing the grader</p>
<p>Monitoring: How? visual inspection</p>
<p>Monitoring: Frequency? every time the grader is used</p>
<p>Monitoring: Who? 3rd party contractor (Kenai Soil and Water Conservation District)</p>
<p>Evaluation & Corrective Actions: manual scrubbing</p>
<p>Supporting Documentation: invasive species management plan, AKEPIC, CNIPM</p>
<p>Critical Control Point #6: Task # 5: travels down Swanson River Road to home office</p>
<p>Significant Hazards: Other Biologic: chytrid fungus</p>

HACCP Plan_Swanson River Road grader operations

Control Measures: power washing grader; consider fungicide	
Limits for Control Measures: powerwash for >15 min until all dirt and veg are removed; treat undercarriage and tires with fungicide	
Monitoring: What? grader	
Monitoring: How? visual inspection and application rate	
Monitoring: Frequency? whenever grader is used	
Monitoring: Who? 3rd part contractor	
Evaluation & Corrective Actions: manual scrubbing	
Supporting Documentation: Mari Reeves	
Facility: Kenai National Wildlife Refuge	Activity: commercial operations
Address: PO Box 2139 Soldotna, AK 99669	
Signature:	Date:

HACCP Plan_Swanson River Road grader operations

HACCP Checklist: commercial operations

Facility Kenai National Wildlife Refuge
Site Swanson River Oil & Gas Unit
Coordinator Claire Caldes
Manager Greg Merle
Address PO Box 2139, Soldotna, AK 99669

- Task # 1: grader leaves local contractor in Sterling and grades up the Swanson Road**
- Task # 2: turns into main entry of Swanson Unit and crosses Swanson River**
- Task # 3: grades pads and roads in Unit**
- Task # 4: leaves Unit via main entry including recrossing Swanson River**

CRITICAL CONTROL POINT

- Hazards were contained
Hazards: Plant: Hieracium spp.
- Control measures were implemented
Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath
- Control limits were maintained
Control Limits: rinse for >15 min until all visible dirt clods and vegetation are gone
- Corrective actions were (performed if necessary)
Corrective Actions: manual scrubbing

- Hazards were contained
Hazards: Plant: Melilotus spp.
- Control measures were implemented
Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath
- Control limits were maintained
Control Limits: rinse for >15 min until all visible dirt clods and

HACCP Plan_Swanson River Road grader operations

vegetation are gone

- Corrective actions were (performed if necessary)
Corrective Actions: manual scrubbing

- Hazards were contained
Hazards: Plant: reed canary grass
- Control measures were implemented
Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath
- Control limits were maintained
Control Limits: rinse for >15 min until all visible dirt clods and vegetation are gone
- Corrective actions were (performed if necessary)
Corrective Actions: manual scrubbing

- Hazards were contained
Hazards: Plant: quack grass
- Control measures were implemented
Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath
- Control limits were maintained
Control Limits: rinse for >15 min until all visible dirt clods and vegetation are gone
- Corrective actions were (performed if necessary)
Corrective Actions: manual scrubbing

- Hazards were contained
Hazards: Plant: Typha spp.
- Control measures were implemented
Control Measures: power washing grader, cattle grate to capture seeds, resurface grated bridge or put apron underneath
- Control limits were maintained
Control Limits: rinse for >15 min until all visible dirt clods and vegetation are gone
- Corrective actions were (performed if necessary)

HACCP Plan_Swanson River Road grader operations

Corrective Actions: manual scrubbing

- Task # 5: travels down Swanson River Road to home office**
CRITICAL CONTROL POINT
 - Hazards were contained
Hazards: Other Biologic: chytrid fungus
 - Control measures were implemented
Control Measures: power washing grader; consider fungicide
 - Control limits were maintained
Control Limits: powerwash for >15 min until all dirt and veg are removed; treat undercarriage and tires with fungicide
 - Corrective actions were (performed if necessary)
Corrective Actions: manual scrubbing