

Office of Research and Technology Transfer Administration 1919 University Avenue, 5th Floor St. Paul, Minnesota 55104—3481 FACSIMILE (612) 624-4843

September 9, 1988

Linda DeRamus, Contracting Officer USDI - Bureau of Land Management 18th & C Streets NW Washington, DC 20240

RE: Contract AA852-CT5-29

Fertility Control in Wild Horses

Dear Ms. DeRamus:

A proposal for a modification to the above referenced program in the amount of \$134,811.00 is hereby submitted on behalf of Donald Siniff and John Tester, Department of Ecology and Behavorial Biology. This modification is to increase the funds available for the subcontract to Marshfield Medical Foundation.

This application has been administratively approved on behalf of the Board of Regents. Questions concerning programmatic aspects of the project should be directed to the Principal Investigators. Those having to do with contract and budgetary matters should be directed to Rick Dunn, Senior Grant and Contract Administrator, at 612/626-2265.

Sincerely,

Merlin Garlid

Assistant Director

Office of Research and Technology

Transfer Administration

RD/dh

Enc.

cc: Professor Donald Siniff, Ecology & Behavorial Biology Professor John Tester, Ecology & Behavorial Biology Tom Eagle, Ecology & Behavorial Biology



September 7, 1988

Ms. Linda DeRamus
Contracting Office
U.S. Department of Interior
Bureau of Land Management
Washington, D.C. 20240

RE: AA852-RP5-27

Dear Ms. DeRamus:

Enclosed please find a request for a modification to Contract AA852-RP5-27. This modification is a result of suggestions made by the National Academy of Sciences Committee on Wild Horses and Burros at a meeting in August 17, 1988 in Reno, Nevada. In order to answer two major questions raised by the Committee, the horses currently maintained in captivity at the Nevada Nile Ranch in Lovelock, NV have to be kept available for study until 1991. The attached contract modification covers the cost of collecting and analyzing the samples. We presume that, as with the current contract, the Bureau of Land Management will be responsible for maintaining and handling the horses. Since Don Siniff is out of the country until October, John Tester has reviewed this modification and cleared it with the University of Minnesota. If you have any questions, please feel free to contact me.

Sincerely.

Edward D. Plotka, Ph.D.

Senior Research Physiologist

EDP:dal

Enclosure

cc: Fred Wagner, Ph.D.

John Boyles Les Sweeney



September 7, 1988

Ms. Linda DeRamus Contracting Office U.S. Department of Interior Bureau of Land Management Washington, DC 20240

Dear Ms. De Ramus:

RE: Contract AA852-RP5-27

I, as an authorized official of the Marshfield Medical Research Foundation, have reviewed the modification to contract AA852-RP5-27 entitled, "Fertility Control in Wild Horses," and find the contract and budget to be consistent with Foundation policy. We look forward to continuing this study with the Bureau of Land Management.

If you have any questions on the financial aspects of this contract, please feel free to contact me.

Sincerely,

Robert C. Intress, Ph.D.

Associate Director

dma

MODIFICATION TO CONTRACT AA852-RP5-27 ENTITLED "FERTILITY CONTROL IN WILD HORSES"

PURPOSE: The purpose of this contract extension request is to specifically answer questions raised by the National Academy of Sciences Committee on Wild Horses and Burros in its August 17, 1988 meeting in Reno, Nevada. In that meeting committee members requested information on 1) the length of time the contraceptive implants are effective in horses and 2) the mechanism by which the implants block pregnancy. In order to answer these two questions, it is necessary to continue studying the horses currently being maintained at the Nevada Nile Ranch in Lovelock, Nevada. Therefore, the specific aim of this contract extension is to request that the horses currently under study at the Nevada Nile Ranch be maintained for study by the University of Minnesota and Marshfield Medical Research Foundation. The studies and costs outlined in this contract modification are necessary for answering the following two questions. 1) How long can the contraceptive implants prevent pregnancy in feral mares? 2) Do the contraceptive implants prevent pregnancy by blocking ovulation or by blocking conception? Calculations based on in vitro release rates of estradiol and progesterone indicate that an effective life of 5 years can be expected. Therefore, this contract modification is requested to extend the pen studies through the end of 1991.

BACKGROUND:

On September 30, 1985 we entered into a contract with the Bureau of Land Management to develop an implantable contraceptive that would block pregnancy for a period of at least two years. It was determined that the studies on captive mares would be conducted at the Nevada Nile Ranch in Lovelock, Nevada where the BLM had a contract to maintain horses.

The sequence of events for studies on captive animals since October 1, 1985 has been as follows:

November 11-16, 1985

Implanted 6 groups of 30 mares each with various combinations of estradiol and progesterone. All implants were placed under the skin (subcutaneous) in the neck. Five horses from each group were handled and a blood sample collected every 2 weeks.

March 11, 1986

It was determined that a significant number of horses had lost implants and that many of those mares retaining implants had hormone levels too low to effect contraception.

April 4-7 and 24-26, 1986

Implanted 6 additional groups of 10 mares each with various combinations of estradiol, ethinylestradiol, progesterone and conjugated estradiol and ethinyl-estradiol. Implants were placed in the muscle of the rump (intramuscular), under the skin of the flank (subcutaneous), or in the peritoneal cavity (intraperitoneal). All horses in all groups

were tested for estrous activity. Mares exhibiting estrus had a blood sample taken 10 days later for hormone analysis. All mares in the additional groups had a blood sample collected every two weeks for hormone analysis.

August 1, 1986

Estrus testing was stopped and a stallion was placed in the pens with the mares treated in November, 1985, with the original hormone implants. Mares that received implants in April, 1985 were determined to be anovulatory and not exhibiting any signs of estrus.

August 20-27, 1986

Mares in the Stone Cabin Management Unit were implanted with 1 of 2 hormone treatments: Ethinyl-estradiol only (EE2) and ethinly-estradiol plus progesterone (PP+EE2). These groups appeared promising based on the results from the studies on captive mares at the Nevada Nile Ranch.

Aug. 28 & Sept. 6, 1986

Mares that were implanted in November, 1985 were palpated to determine if they were pregnant. A significant number of mares were pregnant and it was determined that those treatments did not effect contraception.

January 20, 1987

Two groups of 10 mares each were implanted with the same treatments (EE2; PP+EE2) that were placed in the mares in the Stone Cabin management units. Three additional groups of 10 mares each received implants containing lower levels of ethinylestradiol.

Aug. 24 - Sept. 3, 1987

Mares in the Clan Alpine Management Unit were implanted with EE2 or PP+EE2 containing hormones or implants containing no hormone (CI).

May 1, 1988

A stallion was placed in each of the two pens containing study mares that were implanted during April, 1986 at the Nevada Nile Ranch.

August 17, 1988

We reported to the National Academy of Science Committee on Wild Horses and Burros that current data indicats that at least two hormone treatments have blocked pregnancy without blocking ovulation and two more hormone treatments have blocked ovulation as well as pregnancy (Table 1).

METHODS:

The same procedures will be used to examine both questions, i.e. to determine the effective life of the implants and to determine if the implants block ovulation or block conception. Mares from all effective treatments will be maintained with a fertile stallion at all times. During the months of June and July of all years, blood will be collected from all mares at two week intervals to determine if ovulation has occurred. June and July were selected because this is the peak of the breeding season and if ovulation is going to occur at all, it should occur during these two months. Blood samples will also be collected at two week intervals during the month of November, after the breeding season is over to determine if any animals are pregnant. All blood samples will be assayed for complete blood counts, serum chemistry and serum progesterone. A progesterone level greater than 2.0 ng/ml will be evidence of ovulation and sustained elevation of progesterone for more than 2 consecutive bleedings will indicate the animal is pregnant. The treatment will be considered successful for those groups having a pregnancy rate less than 50 percent. Complete blood counts and serum chemistry analyses will be used to evaluate any long term detrimental effects of the hormone treatments.

TABLE 1 EFFICACY OF CONTRACEPTIVE IMPLANTS IN CAPTIVE FERAL MARES AS OF 8/31/88

* *				YEAR 2			YEAR 3*	
TREATMENT GROUP	NO. IMPLANTED	NO. REMAINING*	NO. OVULATING (%)	NO. PREGNANT	PERCENT EFFICACY OF CONTRACEPTION	NO. OVULATING (%)	NO. PREGNANT (2)	PERCENT EFFICACY OF CONTRACEPTION
1.5-EE2	10	8	7(88)	1(12)	88		· ••	
3-EE2	10	. 8	6(75)	1(12)	88			
8-EE2	20	18	5(28)	0(0)	100			
PP+EE2	10 10	8	3(38) 0(0)	NT ⁺ 0(0)	62 ⁺ 100	6(75)	2(25)++	75
PP+E .	15	9	10(100)	NT	0	9(100)	6(67)	33
PP+EB	10	8	5(62)	NT	38	8(100)	4(50)	50
PP+HE	9	. 4	4(67)	NT	33	4(100)	3(75)	25
PP+HE-G	10	7	2(29)	NT .	71	6(86)	2(29)++	71
PP+EEME	10	7	5(71)	NT	71	7(100)	4(57)++	43
CI	30	17	19(100)	3/3(100)°	0	17(100)	14(82)	

^{*}As of August 1, 1988.

*Not tested (% efficacy is based on ovulation only)

++These animals received subcutaneous or intramuscular implants. We need to verify that the implants are still present in the horses that got pregnant.

⁰³ control (CI) mares were bred.

BUDGET:

YEAR 4 SUPPLEMENT (10/1/88 - 9/30/89)

	Salary	Fringe Benefit	Total
Personnel*			
(Technician - 4.8 mo.)	11,084	4,272	15,356
Supplies			
Blood collection syringe	es, needles	, tubes, etc.	980
Chemicals, glassware and			ounts,
hormone and serum	chemistry as	ssays	1,500
Dry ice for transporting	g samples		140
Equipment			
Computer for data handle	ing and ana	Lysis	4,500
Travel			
8 trips for bleeding hor	rses @ 700		5,600
Miscellaneous			
Reports, publications,	diskettes, p	paper, etc.	700
	SUBTOTAL		28,776
Indirect costs at 47.5% (Prov	visional TD	C, less equipment)	11,531
	TOTAL YEAR	R 4	\$40,307

YEAR 5 SUPPLEMENT (10/1/89 - 9/30/90)

	Salary	Fringe Benefit	Total
Personnel*			
(Technician - 4.8 mo.)	12,177	4,694	16,871
Supplies			
Blood collection syring	es, needles,	tubes, etc.	1,029
Chemicals, glassware and			ounts,
hormone and serum			1,575
Dry ice for transporting			147
Travel			
8 trips for bleeding ho	rses @ 735		5,880
W11			
Miscellaneous Reports, publications,	diskettes, p	aper, etc.	735
	SUBTOTAL		26,237
Indirect costs at 47.5% (Pro	visional TDC	, less equipment)	12,463
	TOTAL YEAR	. 5	\$38,700

YEAR 6 (10/1/90 - 9/30/91)

	Salary	Fringe Benefit	Total
Personnel*			
E. Plotka, Ph.D. (1.2mo.)	7,086	2,397	9,483
(Technician - 4.8 mo.)	13,363	5,151	18,514
Supplies		•	
Blood collection syringe	s, needles,	tubes, etc.	1,080
Chemicals, glassware and	reagents f	or complete bloo	d counts,
hormone and serum of	hemistry as	says	1,654
Dry ice for transporting			154
Travel			
8 trips for bleeding hor	ses @ 772		6,176
Miscellaneous			
Reports, publications,	liskettes, p	aper, etc.	772
	SUBTOTAL		37,833
Indirect costs at 47.5%			17,971
	TOTAL YEAR	6	\$55,804

BUDGET JUSTIFICATION:

Salary for the technician is the actual salary for the individual currently working on the project. The increases for each successive year are based on step and cost of living increases budgeted for Foundation personnel in his category and conforms with the Foundation salary schedule. The technician will be collecting the blood samples and performing all assays necessary to monitor the health and reproductive status of the mares. Ed Plotka's salary is requrested for the last year only because his salary is covered under the current contract through 1990.

The supplies are necessary for collecting and analyzing the 850 blood samples collected each year.

The travel represents the costs for airtravel, auto rental, motel and food for 1 person to travel to Bloomfield, NE to collect the blood samples and bring them back to Marshfield. It is assumed that the horses will be maintained and handled by BLM or BLM representatives at the holding facility near Bloomfield, NE. If that is not the case, travel and personnel will have to be adjusted.

The computer is requested to allow maintaining records on the horses, management of the results of all assays on the horses, analysis of the data for publication and presentation and preparation of the reports and manuscripts. During the course of the study, we have generated data from over 7,500 blood samples. Thus, we are currently processing over 75,000 assay results on captive and free-roaming horses from this study. This modification will add another 24,500 assay results for analysis.

	tocol No
Acc	ount No.
Dat	e Received by RAR
	gram is: Research; Teaching; Othergram is: Intramural; Extramural
	UNIVERSITY OF MINNESOTA - ANIMAL USAGE FORM BA-22 (TYPEWRITTEN ONLY) Dr. Donald B. Siniff and 318 Church St. S.E.
1.	Principal Investigator Dr. John R. Tester Mailing Address Minneapolis, MN 5545
2.	Department Ecol. & Behavarioal Biol. College Biol. Sciences Phone # 612-625-2435 and
3.	Secondary Investigator Marshfield Medical Fdn., Inc. Phone # 715-387-5241
4.	Project Title/s Fertility Control in Wild Horse Populations
5.	List all Funding Sources-Multiple agencies must be listed below or be attached: U.S. Department of Interior Name Bureau of Land Mgmt. Deadline Date ORTTA Number
	Name Deadline DateORTTA Number
0.	Application is: New Renewal Continuation Supplement Other
	If application is Renewal, Continuation or Supplement, furnish:
_	ORTTA #PROTOCOL #
7.	Application is for: a. Research Grant b. Research Contract c. University Course
	d. Training Grant e. Fellowship f. Research Career Development
	g. Program or Center Project h. Other-Describe
Anim form	animals used in the projects described herein will be procured, housed and used in pliance with University Regent's Policy on Animal Care and Use, NIH policy, Federal and Welfare Act and other applicable standards. I will submit a revised animal usage to reflect any significant changes in this program.
8.	Signature of Principal Investigator Level 1. E. Siricf Date 9-8-88
9.	Anticipated dates of study: Begin End
	Duration of Approval: Begin Review
	Univ. Animal Care Committee Chairperson Date
	Veterinarian Date

0. Laborat	ory personnel:				Phone
If anim	mals are to be h	noused in a lab.	where and f	or how lo	ng:
1. Species (Common Na		Where Housed (Bldg Name)	*Classi- fication	Number per yr.	If surgery done is it Survival or Terminal
Feral Hors	e	BLM Corrals Bloomfield, NE	a	110	Survival
b. Una and trace. Signate. What all	in 12 hours, fastivoidable pain, algesics or anestiuma). gnificant to seventhesia, analge	sting of well nou distress or disc sthetics (surgery vere pain, distre esia, or tranquil	rished, hea omfort whice, cardiac of ss, discomf ization	lthy adul h is reli er retroor	r tagging restraint of 1 ts up to 48 hours). eved by tranquilizers, bital blood collection, privation without
nificar	ice, quantity of	tissue needed,	etc.)?		statistical sig-
Si	atistical sign:	ificance and varia	bility in d	ata	
provide in the	a description	of material and form indicated	methods wit	h emphasi	t are applicable and s on the animal involvem If additional space is
a. Eut	hanize and harv	rest tissues (Ite	m 17).		
		intibody producti ements: if surge			"n" below (Item 19).
d. Die	tary manipulati	on (Item 20). cology (including	toxins of	bacterial	, fungal, etc.,
	lgin): (Item 21 avioral studies	The same of the sa		100	
g. Env		ess (e.g., cold e	xposure, re	straint,	forced exercise,
h. Iri	adiation: descr	ibe location of	irradiation	faciliti	es and type and
i. Haz	lioactive materi	.: describe type als; also descri	be methods		W Committee of the comm
j. Into	ectious agents: animal pathoger		bacterial, describe m		tc.) and if human protect personnel
1. Ot1	ner (specify; It	em 32) Int devices (Item	26)		
	rgery (Item 27)		20/.		

15. Abstract of planned use of living vertebrate animals including the rationale for choice of animal species.

The choice of species was dictated by the request for proposal received from BLM. These studies are a continuation of the research conducted on captive feral mares in the BLM holding facility at Lovelock, NEV. The proposed studies are to continue collecting data on mares already implanted with hormonal contraceptives to determine the effective life of the implants. BLM will maintain and provide care for study animals, and study mares will likely be moved to a BLM holding facility in Bloomfield, NEB.

16. Please indicate the potential contributions that these studies could make to the life sciences.

Management plans have been written for range lands being administered by BLM. These plans specify the population of wild horses that should be maintained on each area. BLM is required to maintain populations at the specified level, but can only do so by periodically removing horses. Some of the horses removed are adopted to interested citizens. The remaining horses are held in facilities such as those at Lovelock until they die.

The proposed research could eliminate the removal of horses by providing a technique for holding population levels at the level specified by the management plan. In addition to eliminating the confinement of wild animals, the research has the potential of saving somewhere in the range of \$10 million annually in costs of maintaining unadoptable horses.

17. Do all personnel participate in the Occupational Health Program which consists of an update of tetanus immunization, tuberculin test repeated at 6 month interval for employees working with monkeys, and optional rabies immunization for personnel working with carnivores. Other personnel health matters are considered on an individual basis in cooperation with the University Boynton Health Service. For more information call 624-7687.

Yes___NO_X

×		b. antigen(s)	
- * 1		c. adjuvant(s)	
		d. route anatomic site, frequency, and volume of injection	
		e. method of obtaining blood	
	19.	For physiologic measurements not described under surgery (item 27), describe methods including any drugs used. (Include dosage and route of administration)	
		Horses are restrained in a squeeze chute while blood samples are drawn from the jugular vein. The procedure was developed by our technicians working with a BLM veterinarian.	•
	20.	Dietary manipulationsdescribe any dietary manipulation and special feeding requirements, caloric or nutrient restrictions or excesses.	
		None	
	21	Phomesologic/paydoclogic studies - describe reported to be available.	
	21.	Pharmacologic/toxicologic studies - describe material to be evaluated, route and duration of administration, testing methods such as tail flick, withdrawal, writhing test, LD ₅₀ etc. If hazardous materials are used describe precautions to protect personnel and animals (see also Item 24). Describe the end point of the study and, if death is the end point, provide justification.	٠
		None	
		-8-	

18. For immunization and antibody production, indicate: a. Species

26.	ani	cribe any mechanical devices used to handle, manipulate, or restrain the mals that are not described in Items 14 through 22. If animals are trained more than 1 hour describe their care.
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27.		gery, Anesthesia and Analgesia. (Guidelines for the use of anesthetics, lgesics, etc are avilable from Research Animal Resources 624-9100.)
	Sur	gery - describe survival and nonsurvival procedures.
	1.	Nonsurvival (Animal does not awaken from surgery)
		Species Procedure
		Where is surgery performed (building and room #)?
		Anesthetics/muscle relaxants dose, route, frequency
		Person (s) doing surgery
	2.	Survival Procedure (animal is allowed to recover for any length of time).
		Species Procedure
		Where is surgery performed (building and room #)?
		Anesthetics/muscle relaxants dose, route, frequency
		Allesthetics/muscle relaxants dose, route, frequency
		How long will animals be maintained after surgery?
		Person (s) doing surgery
	3.	For Survival surgery describe the post operative care to be provided including fluids, antibiotics analgesics. Indicate dose, route of administration, and anticipated duration of treatment. For major surgery on dogs, cats, or nonhuman primates analgesics <u>must</u> be given during the first 24 hours post-operatively.

22.	Behavioral studies - describe methods including use of any noxious stimuli or other methods of positive or negative reinforcement.
	Casual observation to detect abnormal behavior that may be attributed to hormonal treatments.
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23.	Environmental stress - describe any significant departure from the normal laboratory environment in which the animals will be kept, e.g., cold exposure, restraint, forced exercise.
	None
	그 전 이렇게 그렇게 하는 사람이 하는 사람이 하는 사람이 가는 사람이 되었다.
24.	Hazardous material (irradiation, radionuclides, carcinogens, mutagens, teratogens, toxic materials, infectious organisms) - describe the hazard, method, route and place of administration, personnel involved, precautions to protect persons and animals, duration hazard is a threat, carcass disposal. Describe the end point of the study and, if death is the end point, provide justification.
	None
25.	Trauma - describe any trauma not described under surgery (item 27). Include any drugs to alleviate pain or distress. (Include drug name, dosage, and route of administration).

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28.	plantation, tumor bearing	nimals may become chronical animals, infectious diseas describe the criteria for e	e studies, chronic ins-
29.	of administration if inject by decapitation or cervice	asia for each species of an ctable drugs are used.) If al dislocation and are not ust be provided-see item 30	anesthetized or sedated
30.		tion for physical methods of euthanasia table approved	
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Spec	ies Average daily census	Average no. days housed	Day care rate BXCXD
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		_ X	X
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	e the costs of animal care no If no, ident	been included in the budge ify source of funds.	et of this application?
32.	Other information not desc	ribed elsewhere.	
	from Marshfield Medical Re	ment to a current study and esearch Foundation, Inc. (1-22-88, for the research	subcontractor). A

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Form 1510-57a (January 1986) (formerly MT 9100-1a),



UTAH STATE UNIVERSITY LOGAN, UTAH 84322

ECOLOGY CENTER

des

August 30, 1988

Mr. Les Sweeney, Chief Biological Resources Branch Nevada State Office U.S. Bureau of Land Management 850 Harrard Way P.O. Box 12000 Reno, Nevada 89520

Dear Les:

I enclose the material you requested on the members of the Committee on Wild Horse and Burro Research.

We appreciated your meeting with us, Les. I know everyone is busy and it especially cut into the schedules of the out-of-town people. Please extend my thanks to them.

Sincerely,

Frederic H. Wagner, Chair Committee on Wild Horse and Burro Research

FHW/sb

Enclosure

NATIONAL RESEARCH COUNCIL

2101 Constitution Avenue Washington, D. C. 20418

BOARD ON AGRICULTURE

Committee on Wild Horse and Burro Research

FREDERIC H. WAGNER, Chair College of Natural Resources Utah State University Logan, UT 84322 (801) 750-2555

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Dept of Range Wildlife & Forestry
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1000 Valley Road
Reno, NV 89512
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(415) 642-8462

JOHN W. MENKE
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University of California
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EDWARD S. MURRAY Spur Veterinary Hospital Box 277 Spur, TX 79370 (806) 271-3355

BILL W. PICKETT
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(303) 491-8373

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Minneapolis, MN 55417
(612) 725-2000 (Office)
(612) 888-7267 (Home)

MAITLAND SHARPE
Izaak Walton League of America
1701 N. Ft. Myer Drive, Suite 1100
Arlington, VA 22209
(202) 528-1818

Walt Cornelling

Deptot & iology

The St. Univ.

305)646-3611

Board Member: John Pino

Staff: Richard Wiles, Project Officer

Susanne Mason, Senior Project Assistant

Board on Agriculture, National Research Council, (202) 334-3071

July 27, 1988

Biographical Information

of the Committee on Wild Horse and Burro Research

FREDERIC H. WAGNER, Ph.D., Chair (wildlife management, biology)

WAGNER, FREDERIC HAMILTON, b Corpus Christi, Tex, Sept 26, 26; m 49; c 2. BIOLOGY. Educ: Southern Methodist Univ. BS, 49; Univ Wis, MS, 53. PhD(wildlife mgt, zool), 61. Prof Exp: Refuge asst, US Fish & Wildlife Serv, 45; asst zool & bot, Southern Methodist Univ, 46-49; asst wildlife mgt, Univ Wis, 49-51; res fel, Wildlife Mgt Inst, 51; res biologist, Wis Conserv Dept, 52-58; asst prof wildlife resources, Utah State Univ, 58-59; res biologist, Wis Conserv Dept, 59-61; assoc prof, 61-66, assoc dean, Col Natural Resources, 70-77, PROF WILDLIFE RESOURCES, UTAH STATE UNIV, 66-, ASSOC DEAN, COL NATURAL RESOURCES, Tr. Concurrent Post. Dir Desert Biomed, US-Int Biol Prog & mem US Exec Comt, Int Biol Prog. 71-74; mem comt predator control, President's Coun Environ Qual, 71. Honors & Awards: Award, Wildlife Soc, 68. Mem: Ecol Soc Am; Am Soc Mammai; Wildlife Soc; Am Inst Biol Sci; Cooper Ornith Soc; Sigma XI. Rest Vertebrate population ecology, especially population dynamics, limiting factors and homeostatic mechanisms; wildlife management; conservation of natural resources; systems ecology. Mailing Add: Dept Wildlife Resources Utah State Univ Logan UT 84321

ULYSSES S. SEAL, Ph.D. (reproductive biology)

b Mullens, W Va, June 13, 29; PSYCHOLOGY, BIOCHEMISTRY. Educ: Emory Univ, BA(psych), 49, MA(psych), 50, PhD(biochem), 57; Univ of Minnesota, Postdoc(biochem), 57-59. Prof Exp: research chemist, VA Med Ctr, 59-, CAREER RESEARCH SCIENTIST, VA MEDICAL CENTER, MINNEAPOLIS, 80-; prof, biochemistry, Univ of Minnesota, 71-, fisheries & wildlife, 76-, ecology & animal behavior, 86-. Concurrent Pos: originator & dir, Intl Species Inventory System, 72-78; leader, US-USSR Environmental Agreement, Animal Immobilization Project, 78; chair, Captive Breeding Specialist Group, IUCN/SSC, 78-; mem, OTA Genetic Diversity Animal Resources Working Group, 84-86; VACO Research Service, Planning Council, 88-. Mem: AAAS; Endocrine Society; Society for the Study of Reproduction; Wildlife Society. Mailing Add: Veteran's Administration Medical Center, Bldg 49, Room 207, 54th St & 48th Ave S., Minneapolis MN 55417.

Equine Science

BILL W. PICKETT, Ph.D. (equine reproductive phsyiology)

PICKETT, BILL WAYNE, b Cyril, Okla, Dec 14, 30; m 55; c 3. REPRODUCTIVE PHYSIOLOGY. Educ: Okla State Univ, BS, 52; Univ Mo, MS, 55, PhD(agr), 58. Prof Exp: From asst prof to assoc prof, Univ Conn, 57-67, res asst, 58-59; PROF PHYSIOL & BIOPHYS, COLO STATE UNIV, 67-, DIR ANIMAL REPROD LAB, COL VET MED & BIOMED SCI, 70-Concurrent Pos: Mem, Rockefeller Found Mex Agr Prog, 63. Honors & Awards: Physiol & Endocrinol Award, Am Soc Animal Sci, 78; Res Award, Nat Asn Animal Breeders, 80; L W Durrall Award, Colo State Univ, 64-64. Mem: Am Soc Animal Sci; AAAS; Soc Study Reprod; Soc Study Fertil; Am Dairy Sci Asn. Res: Reproductive physiology of the male with special emphasis on preservation of spermatozoa of the equine and bovine species. Mailing Add: Animal Reprod Lab Dept of Physiol Col of Vet Med Colo State Univ Ft Collins CO 80523

JOEL BERGER, Ph.D. (equine science)

b December 22, 51; BIOLOGY, EQUINE SCIENCE. Educ:
California State Univ, BA(biology), 74, MS(biology), 75;
University of Colorado, PhD(biology), 78; Smithsonian
Institution, Post-Doc Fellowship, 78-79. Prof Exp: adjunct
prof, Univ of New Mexico, 84; adjunct prof, Northern Arizona
Univ, 85; ASSOC PROF, UNIV OF NEVADA, 85-. Concurrent Pos:
res assoc (reappt), Smithsonian Institution, study of social
biology and population dynamics of wild horses in the Great
Basin Desert, 79-88. Honors & Awards: Guggenheim
Foundation Grants, 80-84, "Resource Defense and the Dynamics
of Agression in Wild Horses"; National Geographic Society
Research Grants, 82 & 83, "Wild Horses: Reproduction,
Mortality, and Social Biology." Hailing Add: Dept of
Range, Wildlife, & Forestry, Univ of Nevada, 1000 Valley
Road, Reno NV 89512.

Veterinary Medicine

ED MURRAY, D.V.M. (equine lameness)

Educ: Colorado State Univ, DVM, 62. Prof Exp: VETERINARIAN, SPUR VETERINARY HOSPITAL. Concurrent Pos: State Board of Examiners, State of Texas; vice president, American Association of Equine Practitioners. Hailing Add: Spur Veterinary Hospital, Box 277, Spur TX 79370.

Population Ecology

DALE R. McCULLOUGH, Ph.D. (wildlife management, ecology)

MCCULLOUGH, DALE RICHARD, b Sioux Falls, SDak, Dec 5, 33; m 58; c 3. WILDLIFE MANAGEMENT, ECOLOGY. Educ: SDak State Univ. BS, 57; Ore State Univ. MS, 60; Univ Calif, Berkeley, PhD(zool), 66. Prof Exp: Instr zool, Univ Calif, Berkeley, 65-66; asst prof wildlife mgt, Univ Moroth, Ann Arbor, 66-69, assoc prof wildlife & fisheries, 69-74, chmn resource ecol prog, 71-74, prof natural resources, 74-80; MEM FAC FORESTRY & RES MGT, UNIV CALIF, BERKELEY, 80- Mem: Wildlife Soc; Ecol Soc Am. Res: Ecology and population dynamics of large herbivores; ecosystem processes. Mailing Add: Dept Forestry & Res Mgt Univ Calif Berkeley CA 94720

Range Management

JOHN W. MENKE, Ph.D. (range science, agronomy)

b San Francisco, Calif, April 16, 45; RANGE SCIENCE, AGRONOMY. Educ: Amer River College, AA(math), 66; Univ of California-Davis, BS(range mgmc), 69, MS(agronomy), 70; Colorado State Univ. PhD(range science), 13. Prof Exp: asst prof and asst range ecologist, Agric Experiment Station, Dept of Forestry and Resource Mgmt, Univ of California-Berkeley, 73-78; asst prof and asst range ecologist to assoc prof and assoc range ecologist, Agric Experiment Station, Dept of Agronomy and Range Science, Univ of California-Davis, 78-86; PROF AND RANGE ECOLOGIST, AGRIC EXPERIMENT STATION, DEPT OF AGRONOMY AND RANGE SCIENCE, UNIV OF CALIFORNIA-DAVIS, 86-. Concurrent Pos: member, Western Regional Coordinating Committee on Rangelands Research, 81-: consultant, OTA assessment of the impacts of technologies on productivity of rangeland resources, 81; member, Range Management Advisory Committee, CA State Board of Forestry, 78-; consultant on rangeland management, US Army Corps of Engineers, 76-. News: Society for Range Management, Ecological Society of America, AAAS, American Institute of Biological Sciences. Mailing Add: Dept of Agronomy and Range Science, Univ of California, Davis CA 95616.

Public Lands Policy

MAITLAND SHARPE (ecology, political science)

b Washington, DC, July 13. 45; ECOLOGY, POLITICAL SCIENCE. Educ: Swarthmore College, BA, 67; Stanford Univ, MA, 68. Prof Exp: consultant to National Parks, Future Project, Conservation Foundation, 72; coauthor and editor A Gleizens Guide to Glean Water, Izaak Walton League of America, 72; environmental affairs director, Izaak Walton League, 73-82; CONSERVATION DIRECTOR AND ASSOCIATE EXECUTIVE DIRECTOR, IZAAK WALTON LEAGUE, 82-. Hem: US Man and the Biosphere Committee on Rangelands, Implementation Board for the North American Waterfowl Plan, Alliance of Environmental Education, Coalition for Water Project Review, Council for a Sound Waterways Policy, Natural Resources Council of America, Nat'l Fish and Wildlife Coordinating Committee, River Country Voices. Mailing Add: Izaak Walton League of America, 1701 N. Fort Myer Drive, Suite 1100, Arlington VA 22209.

Form 1510-57 (January 1986) (formerly MT 9100-1)

CONTRACTING OFFICER

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

2. Contract No. AASS - 75 3 Report No.

4. Contract Name

CONTRACT DIART CONTINUTION SHEET	
25. Narrative Report (continued)	5. Date 5/24/88
open wounds on her neck had hea	
was a large clump of scan Lissu	
	an after first
trimming the mane where the co	1 1 1
T checked the collar for tight	^ /
the collar was a little trant O	
setting lagle expressed concern	
was Too lose and would slip up	
I would have to agree with his	
decided to replace the collar a	
setting. Well probably have troub	
more again, especially when the	
and Danters up the collar en	
main concern seems to be wit	10
as he claims has happened in	Canson E.L.
0 (
We found a soud house the	it had grown
into his collar. He had a son	all cut behind
the Jaw We remared the co	lar and treated
the cut with Nitrophyrozone.	The horse was
in good physical condition.	
0 ,	
There were no further att	mote the to locate
arinals due to the stooms wir	ds.
7	
34 Signature	9. 055.0
26. Signature Valual Resource Space.	18. Office Toropah RA
Form 1510-57a (January 1986) (formerly MT 9100-1a)	CONTRACTING OFFICER

U.S. DEDARENCE OF THE				***	1.	Page 1 of 2
U.S. DEPARTMENT OF THE BUREAU OF LAND MANA		2. Contract No.		7-29 3. 1	Report No.	
CONTRACT DIARY		4. Contract Name				The state of the s
5. Contractor	00	6. Contra	ctor Representat	ive on Size		
7. Government Officials on Site	Minnesota	8. Govern	nment provided se		ite and timely?	
Thomas POGAC			s No-Exp			
			Weather Hay	۹ -	heah u	unds
14. Temperature ° F 15. Ground Co	ndition/Ref. Location	14-11	16. Contract Tir	ne 17. Da	ys Used	18. Completion Date
Min. 76 Max. Sten. 19. Time Used (%) 20. Work Com	pleted (%) 21. \	Work on Schedule Yes No	22. Contra	ctor's Work (X appropriate Unacceptable	box) —Explain in narrative
23. Work Force and Equipment (*: G-Govt.; C-					- Indeed process	
WORKER & CLASSIFICATION	*	EQUIPMENT T	YPE *	HRS.	WORK	LOCATION
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						•
		,				
		***************************************				· · · · · · · · · · · · · · · · · · ·
					•	
24. Estimate of Pay Work Accomplished (*: G-	Govt.: C-Cont.: S-Subco	ont.)				
	f materials (only) deliver DESCRIPTIO	red)	QUANTITY		WORK LO	CATION
				4		
				-		
				-		,
25. Narrative Report						
5/17/88: Becaus	e of t	he high	hour	ds,	ne c	lecided
to just lo	case one	made	we	. kue	en ce	guired
treatment.	We la	cated	her	usena	th	e radio
toasmitter.	It re	guired	tevo	da	to o	F M-99
to bring t	he mare	down	. She	- wa	\$ #	831, a
Sorrel ma	e. She	was é	2-year	10 2	2 n	hen
collared in	1986.	She h	ad a	de	encus	t under
the neck	. Arour	vol the	cot	was	al	ot of
26. Signature	27. Title			28. Office		
Form 1510-57 (January 1986) (formerly MT 910	0-1)			and the second s	CONTRAC	TING OFFICER

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUTION SHEET

2. Contract NoAA858 - CT5
4. Contract Name Report No.

25. Narrative Report (continued)	5. Date 5/24/88
in fection. The wound emitted a very	bed odoc
There was a lot of scar tissue und	In the
Neek from previous injury which had	healed
over. The scar dessue was 3-4 inche	5 40
depth. We cleaned the wound and	Keated
it with vitrophyrazone. The collar	she was
in good physical condition. She is	sive was
bleston a let from the don't ente	y point
an the rear of the harse (approx	3 makes
from the recound. Eagle did not	feelit
was serious.	
1/ 0 .0	
We cancelled the remainder of	The days
May 23 1988	NEOW (ED)
27. Title Resource Spec 1 avop	h RA
E 1610 67- /1	CTING OFFICER

		F THE INTERI		2. Contract	W.1850.	-CT5	-29	3. Report No.	1. Page
	NTRAC			4. Contract		-10			
7. Government Officials on	Site J	Pagaenik		8. G	Yes N	vided ser	vices ad	equate and time	y?
5/3/88 m	ay of Weel	1. Time Arriv		ime Departed	13. Weather		alm	n wa	m
4. Temperature ° F Min. 84 Max.	15.0	round Condition/R	abin	Valle	4	tract Time	17.	Days Used	18. Completion Date
9. Time Used (%)	20. W	ork Completed (%)	21	. Work on Scheel	ile 22.			rk (X appropria	te box) ble—Explain in narrative
3. Work Force and Equipm									
WORKER & C	LASSIFI	CATION	*	EQUIPME	NT TYPE	*	HRS.	WOI	RK LOCATION
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						-	-		
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4. Estimate of Pay Work A PAY ITEM *	ccomplish	- (check if material		vered)	QUA	NTITY		WORK	LOCATION
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)							•
5. Narrative Report	egan	0830							
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Cabin	Va 11	en and	RO	CON LA TO	la- a	100	9	I has a	18 6
Cabin 1	vall	and and	80	f 1/	4.	hood	s. h	aut It	a allaborari
Cabin Young/	vall	d rat	80	f /	of t	hroi	Je	out the	Le allotmai
Cabin Young/ Most	vall adv	of rat	e o	f /	4.	e.	Je No	out to	ne allotmai
Cabin Young/ Most f	vall adv	the b	ef o	f //	when	e.	Je 10	out to	ne allotmeni now kee wees whe yards beho
cabin young / most foals	wall wall	the b	ef of one	f 1/ n age To	when	e.	Je 10	out to	ne allotmai now kee wees when yards beh.
young/ most f	wall wall	the bo	end. lose	f 1/ n age To	when	ed han when	Ale 10	Jerson Jerson The f	ne allotmani now kee wees whe yards beh

U.S. DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT** CONTRACT DIARY CONTINUTION SHEET

2. Contract NAASSA-CTS 3. Report No.

4. Contract Name

25. Narrative Report (continued) 26. Signature 27. Title 28. Office 1000 Form 1510-57a (January 1986) (formerly MT 9100-1a)

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CONTRACT DIARY CONTINUTION SHEET

2. Contract No Assa-CTS-29	3. Report No.
4. Contract Name	

25 Namerius Papart (continued)	5. Date
25. Narrative Report (continued)	J. Date
cut began to bleed (most of the other c	ollar remared
ded not result in bleeding). We cleaned it	he wound
and treated it with nitrophyrozone. The	Jail was
condition describe the infected wound.	75: 221
The warm Jemperatures of the pa	st odays
appears to be resulty in and increase	in infector
and fly/maggot infestation to the moun	ds. Thes
May aggravate small cuts under collars.	asei
requiring treatment. These will be to	eated in
June. The horsey required treatment	twere
in bands with tooks.	
We were able to locke all bu-	+ 0 0 13
1 11	to as the
protes were approaching their 8 hour/day	limit. We
ended the flight at 1730.	
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	,
28. Signature 17. Title Natural Resource Spec. Tave	pah RA
F	CTING OFFICER

	MENT OF THE INTERIOR	12.00	ntract No. A	aca	3. Rep	I. Page of			
	TRACT DIARY	4. Co	2. Contract No. AA852-CT5-29 3. Report No. 4. Contract Name						
5. Contractor	,		6 Contracto	or Representati	ve on Site				
7. Government Officials on S	La of Minnes	ofa			EAGLE	• • •			
7. Government Officials on Si	in		8. Government provided services adequate and timely? Yes No—Explain in narrative						
9. Date 10. Day	of Week 11. Time Arrived	12. Time Depar		ear, w	anm				
14. Temperature ° F	15. Ground Condition Ref. 1			. Contract Tin		Jsed 18. Completion Date			
Min. 84Max. 19. Time Used (%)	20. Work Completed (%)	21. Work or		22. Contrac	tor's Work (X ap	ppropriate box) nacceptable—Explain in narrative			
23. Work Force and Equipme	ent (*: G-Govt.; C-Cont.; S-Sub-			1 1	eptable [] O	inacceptable Explain in instant			
	ASSIFICATION		IPMENT TYP	E *	HRS.	WORK LOCATION			
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	complished (*: G-Govt.; C-Cont (check if materials (or	nly) delivered)	2.0	*					
PAY ITEM *	J DES	CRIPTION		QUANTITY		WORK LOCATION			
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25. Narrative Report									
6/13/85: To	Began 0900								
we	canducted	bc	ensus	of	the	entire			
valle	ey. We we	ne ab	le to	00	serve	all but			
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e for	La Logat		00 7	- May 8		stated that			
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<u>ne</u>	had tongo	tten n	25 00 14	1000	whe	an presided			
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hans	e whech	reede	don	edical	atte	whom she			
					W 05=				
26. Signature	27. Ti	Jarma /	lesa	5000	28. Office	each RA			
Form 1510 57 (January 1986)	(formerly MT 0100.1)			(

	OF LAND MANA	AGEMENT	2. Contract No.	52-05-293. Rep	ort No.
CONTRACT	DIARY CONTINU		4. Contract Name		
. Narrative Report (co	ntinued)				5. Date
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1200	band	with	out radio	collared	harses.
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Form 1310-57a (January 1986) (formerly MT 9100-1a)

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										1.	Page 1 of 3	
2. Con	tract N	94/	85	- 2	CTO	5-	29	3. Repo	ort No.			
4. Con												
	6. Co	ntrac	ctor	Con	sentativ	e or	1 Si	To				
	8. Go		ment	provi	ded ser	vice	ac	dequate a	nd time	iy?		
Departe	d	13. V	-			_ /					0	
30		Т	16.	NAME OF TAXABLE PARTY.	ict Tim	or designation of	17	. Days l	W I	7	18. Completion Date	
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Yes	☐ No			22.	Acc	epta	ble	U	accepta	able-	Explain in narrative	
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28. Office

CONTRACTING OFFICER

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

Time Arrived

0800

15. Ground Condition/ Ref. Location

20. Work Completed (%)

10. Day of Week

23. Work Force and Equipment (*: G-Govt.; C-Cont.; S-Subcont.) **WORKER & CLASSIFICATION**

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

- (check if materials (only) delivered)

27. Title

DESCRIPTION.

5. Contractor

14. Temperature ° F

Min. 90 Max. 19. Time Used (%)

PAY ITEM

25. Narrative Report

26. Signature

Form 1510-57 (January 1986) (formerly MT 9100-1)

9. Date

7. Government Officials on Site

12. Time Departed

1530

21. Work on Schedule
Yes No

☐ Yes

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUTION SHEET

2. Contract No. AA 852 75 - A Report No.

4. Contract Name

25. Narrative Report (continued) 26. Signature 27. Title 28. Office Form 1510 57a (January (886) (formerly MT 9100-1a) CONTRACTING OFFICER

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUTION SHEET

2. Contract Name

3. Report No.

4. Contract Name

25. Narrative Report (continued) 26 Signature 28. Office

	MENT OF THE	AGEMENT	2. Contra	act Ng A850 act Name	-CT5-29	1	I. PageofQ
5. Contractor UNWES 7. Government Officials on S Thom		Minnes	ota		n Eag	dequate and timely	?
9. Date , 10. Day	of Week 11.		Time Departed	13. Weather	clea	7. Days Used	18. Completion Date
Min. 9 OMax. 19. Time Used (%)		one Cab	21. Work on Sc	hedule 22.	Contractor's W	ork (X appropriat	e box)
23. Work Force and Equipme	ent (*: G-Govt.; (C-Cont; S-Subcont	Annual Control of the	No	Acceptable	Unacceptab	le—Explain in narrative
WORKER & CI	ASSIFICATIO	N *	EQUIP	MENT TYPE	* HRS.	WOR	K LOCATION
	/						14 15 15 15 15 15 15 15 15 15 15 15 15 15
				2			
			-				
24. Estimate of Pay Work Ac PAY ITEM *		-Govt; C-Cont; S- c if materials (only) of DESCRI	delivered)	QUA	NTITY	WORK I	LOCATION
			\				
	+ -						
25. Narrative Report							
6/26/88: The	Rega	v 0 800	-the	Clal	+	1	locate and
treat :	3 ma	nes k	Nown	40 OL	lave o	-ollan	problems.
These of the reas	us H	cheduled	figh	t). On	t tree	ton the	6/14/88 nanses had
a radio	رة دا	an, wh	· le 0+	he o	then &	two d	d Not.
mare.	work	regan t	he so	tarch	the c	worth	of the
6. Signature		27. Title		·	28. Off	ice	
Form 1510-57 (January 1986)	Kormerly MT/9	100-1)	mal Ros	ource Sp	200	CONTRA	RA ACTING OFFICER

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUTION SHEET

2. Contraca Na 802 - CTS - 29 3. Report No.

4. Contract Name

25. Narrative Report (continued) 5. Date 6/27/88
test site boundry fence. We found the mare (#88
about 2 miles wortheast of Reeds Rauch well.
The more had expired. She appeared to have
been dead only 2 or 3 days as only the
soft tissues around the face has decomposed
It appeared that there may have been a
significant amount of collar injury as the
week was the only flashy / hide portion of
The avinal in an initial stage of decomposition. To carefully observed the carcass for bullet
holes but could not find any. There were
Numerous scars on the horse's flank from
what appeared to be partitivere cuts. The
scab from the dart (the more was darted 6/14/8
but did not respond to the drug) was also
evident. Eagle would not affete conclusively
that the death was caused by the collar or
the drug minus the autidate. He felt that it
and confusion induced by the drea. The and case
I expressed that I fait the death was attributed
to one research activity or another. Tom acreed.
If death was induced by the drug minus the
autidate, we may have two more houses in a
similar cardition, we don'ted two naves on 6/14
which also did not recione an articlate. In that
they were without collars that addional stress
may spane them a similar take as #887.
the spent of hours searchy for the remaining
than we seached nost of the valle and surrounding
hills we colled off the search for the day at
1400.
26. Signature 27. Title Navural Resource Spec 28. Office Towards RA
Form 1510-5/a (January 1986) (formerly M 9100-1a)

	T OF THE INTERIOR	2. Co	ntract NoA	A852-	CT5		I. Page of
CONTRA	CT DIARY	4. Co	ntract Name				
7. Government Officials on Site	J	esofa	8. Govern	ment prov	ided service		y?
9. Date 10. Day of W	cek 11. Time Arrived	12. Time Depart	ed 13.	Weather	clear	colm	
14. Temperature ° F 15.	Gound Condition/Ref. Lo	cation		16. Contra	The state of the last of the l	17. Days Used	18. Completion Date
	Work Completed (%)	21. Work of	Schedule		Contractor's	s Work (X appropriat	e box) ble—Explain in narrative
23. Work Force and Equipment (*:	G-Govt.; C-Cont.; S-Subco	ont)					
WORKER & CLASS	FICATION	* EQU	IPMENT TY	YPE	* HI	RS. WOR	K LOCATION
				1			
							ŵ.
24. Estimate of Pay Work Accomp	(check if materials (only			QUANT	DITY	WORK	LOCATION
TATTIEM + V	T >	KII TION,		QUAIN		WORK	LOCATION
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U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUTION SHEET

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4. Contract Name

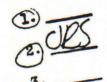
25. Narrative Report (continued)	5. Date
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United States Department of the Interior

BUREAU OF LAND MANAGEMENT **NEVADA STATE OFFICE** 850 HARVARD WAY

P.O. BOX 12000 **RENO, NEVADA 89520-0006**



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What is this if went.

IN REPLY REFER TO:

4700 (NV-931.3)

MEMORANDUM

To:

Director (250) Room 901, Premier Bldg.

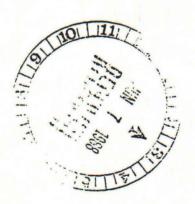
From:

State Director, Nevada

Wild Horse Fertility Control Research

I have recently been asked by various members of the public, whether the events which have taken place with regard to the University of Minnesota Research contract have had an impact on the validity of the research results. Particularly, the concerns expressed by the public relate to whether the loss of 48 research animals in the Clan Alpine Herd and the problems with tightness of identification collars in the other herds, have had any adverse effect upon the research.

In order to respond to such public inquiries and satisfy ourselves that the research effort is still viable, I would like to request that you obtain an answer to this question from the University of Minnesota or whomever is qualified to make such a determination. An answer would go a long way toward tempering the concerns of our wild horse publics.



Fred Wor

Modification No. 4 Contract No. AA852-CT5-29 Page 2 of 3 This modification is intended to clarify the roles of BLM and contractor personnel, to discuss BLM's anticipated level of involvement in monitoring the research, and to establish specifications related to fit of the collars. The modification also provides additional funding for increased flight time, in an amount of \$164,134.00. This amount is obligated to cover costs associated with checking and evaluating horse collar fit as well as additional costs resulting from long distances between study areas and increased search time due to terrain. MODIFICATION: 1. The following stipulations have been agreed upon by the University and the Bureau, and are hereby incorporated into this contract. A fall flight shall be incorporated for each study area between October 15 and November 15 to allow additional monitoring of collar integrity and fit. The University of Minnesota shall notify the BLM each year by March 1 (except for 1988, when notification will be by March 15) of the anticipated schedule for monitoring activities on each study area and the Lovelock corral facility. Copies will be provided to the appropriate Project Inspector, the Contracting Officer's Representative, and the Contracting Officer. If changes in the schedule become necessary from the University's perspective, the appropriate project inspector shall be notified at least 2 weeks ahead of the change. Between 4 and 7 days preceding each monitoring flight or other activity affecting study herds, the University shall contact the appropriate project inspector to coordinate defails of the activity. BLM shall have the opportunity to inspect all herd monitoring activity from a separate helicopter. Ship-to-ship communication capability is required. If for safety reasons (winds, visibility, etc.) the BLM is unable to fly, the monitoring flight shall be rescheduled. On all monitoring flights, collar security and fit shall be evaluated from the air for all locatable radio-equipped collars and those non-radio collars in the same bands with radio-equipped collars. If a significant (5%) fraction of the non-radio collars are found to present a fit problem (evidence of chafing, loss of hair, swelling, bleeding, drainage, etc) in the discretion of the PI, monitoring will be extended to all bands with collared animals.

Modification No. 4 Contract No. AA852-CT5-29 Page 3 of 3 h. Collars should fit as tight as possible while allowing a person to slip his hand under the collar at the side of the animal's neck to the midpoint of his palm, without depressing the animal's neck muscles. Collars determined to be too tight shall be readjusted to conform to item h. above by the University during the course of the day's flight. If readjustment would cause excessive stress at the time of discovery (e.g., mare with foal) in the discretion of the PI, adjustment of the collar will be postponed to a later date. If research activities, either on free-ranging animals or animals confined in the Lovelock corrals, cause undue stress to a particular animal, in the discretion of the PI, the activity shall be temporarily halted so that the PI can provide technical direction on the matter. If the matter cannot be resolved on the site, it shall be forwarded to the COR and Contracting Officer for resolution. Within 2 weeks after each monitoring season the University shall provide the appropriate PI with a copy of a status report of animals sighted and any other notes made on animal location or condition. 2. The clarification is hereby made that necropsy is not authorized in field situations. Necropsies shall be performed at the Lovelock holding facility, or at another facility approved by the COR. The schedule and extent of necropies shall be included in the University's annual schedule notification to the Bureau, described in paragraph 1.b. above. The total estimated cost of the contract is hereby increased by \$164,134 from \$1,184,838 to \$1,348,972. No other terms and conditions of the contract are changed. END OF MODIFICATION



United States Department of the Interior

BUREAU OF LAND MANAGEMENT WASHINGTON, D.C. 20240

JUN 2 1 1988

1510 (250) 4700

Donald B. Siniff, Ph.D.
Department of Ecology
and Behavioral Biology
University of Minnesota
Minneapolis, Minnesota 55455

Dear Dr. Siniff:

We have recently been asked to respond to two important concerns in regard to the research on fertility control in wild horses being carried out under Bureau of Land Management (BLM) Contract Number USDI-AA852-CT5-29. We believe that, as the principal investigator for this project, you are the person best qualified to answer these concerns.

The first issue, raised by Senator Harry Reid, involves the problems caused by the use of radio collars to monitor wild horses. Senator Reid asked for a review of alternative monitoring methods. We would appreciate information on possible alternatives to radio collars, including advantages, disadvantages, and costs,

In Nevada, BLM officials report that they are receiving inquiries from the public as to whether the problems with the collars and the deaths of 48 horses on the Clan Alpine study area have had any adverse effect on the research. In essence, the question seems to be: Is the research effort still viable?

We would appreciate an early reply to these concerns.

Sincerely yours,

Linda I. DeRamos Contracting Office.

Linda J. DeRamus Contracting Officer

cc: State Director, Nevada (910)

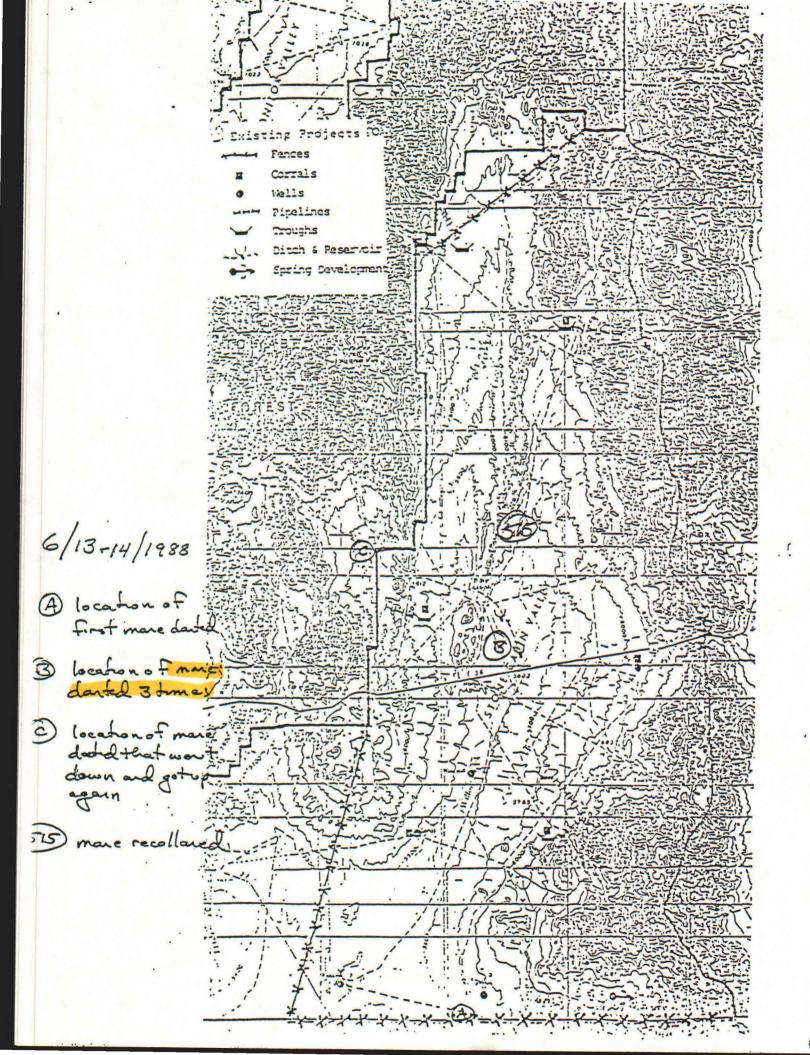
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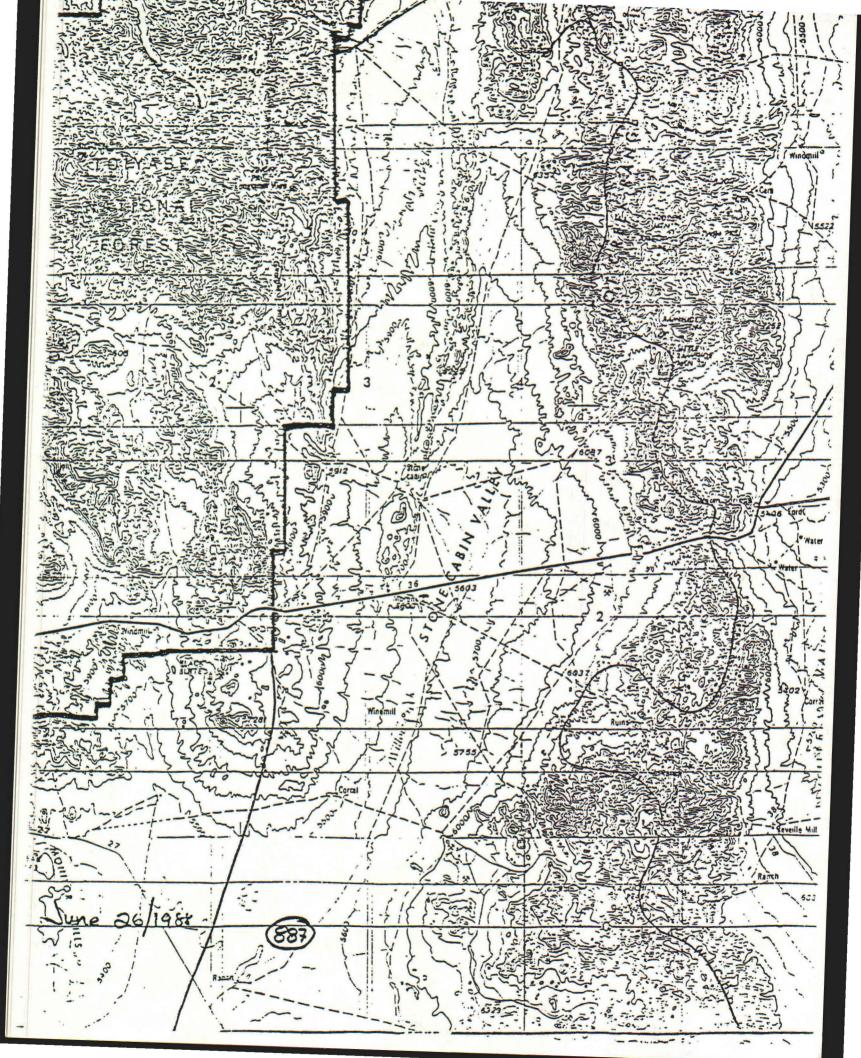
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AUS 0 3 1988

Dr. Don Simiff
University of Hisnesota
Department of Ecology and Behavioral Biology
109 Biology Duilding
318 Church Streat S.E.
Minneapolis, Minneacta 55455

Dear Dr. Simiffs

Les Sucency and I have reviewed the contract diaries prepared by BLM's project inspectors during the menitoring sesson completed in June.

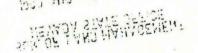
Overall, we believe the precedures established in the lest contrast modification have worked fairly well. We have also appreciated the University's increased sensitivity to the health and safety of the horses and to the public's interest in the wild horse program.

We do have a couple of specific situations which areated problems, and which should not occur in the future. They are:

- 1. Several instances in which the BLM PI and Tom Regle had a disagreement over the tightness of collars. The final decision on tightness is at the discretion of BLM's project inspector, and we will expect the University to shide by our decision in the event of a disagreement.
- 2. On one secasion, the BLM monitoring person was left to watch a darted horse while the University employee flow off to dart a second horse. BLM's function is solely to monitor contractor performance and to provide technical guidance as necessary. BLM personnel are not authorized to conduct any research or to be "helpers". I have reminded BLM employees of this. The University should do likewise.

At the outset, some of the coordination calls from the University to BLM did not occur - this problem was resolved efter our conference call to you in early Hay. We also discussed with you at that time the limited availability of drugs, and the expense involved in making flights without adequace supplies.

I understand that Tom Regle and Tom Pogasnik discussed the costs versus benefits of recollaring enimals, and that Tom Regle has tentatively decided that he will discontinue attempts to recollar. Please let up know if the University has in fact made this decision.



We continue to be concerned about the potential of re-injuring these snimals which have already been recollered especially since the next flights will not be until October-November. We will discuss this further with you separately.

If you have any suggestions for the improvement of the memitoring flights, please let me know.

Sincerely,

Linda L Durkands Contracts Office

Linda J. DeRemue Contracting Officer

CC: Les Sweeney, NV(931)
Tom Pogacnik
Tim Reuwsast
Hancy Ryan
Tom Eagle
ASRF ASPF 852RF
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Table 1. Results of aerial surveys in 1988. % foals lists number of foals per 100 adults sighted. ID indicates number of foals assigned to mares in collared bands, remaining foals were either not assigned to mares or were running with bands containing no collared animals.

Date	Adults	Foals	% foals	Collars	ID	
Beaty Butte						
880509	239	29	12.1	24	5	
880520	216	29	13.4	22	4.	
880620	219	42	19.2	22	4	
Flanigan						
880421	246	15	6.1	24	2	
880505	280	29	10.4	21	2	
880519	277	28	10.1	16	3.	
880616	250	26	10.4	14	1	
Wassuks						
880420	129	13	10.1	39	11	
880504	109	11	10.1	36	8	
880518	146	19	13.0	42	13	
880615	79	1,1	13.9	24	7	
Stone Cabin						
880418	471	37	7.8	116	20	
880502	566	49	8.6	159	22	
880523	605	75	12.4	149	33	
880613	530	47	8.9	136	21	
Clan Alpine	5					
880423	873	139	15.9	261	50	
880507	784	128	16.3	220	63	
880521	724	112	15.4	205	42	
880617	702	96	13.6	191	31	

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1575 Akard Dr. Reno, NV 89503

16 March 1988

Dick Stark BLM (250) 18th and C St. NW Washington, D.C. 20240

Dear Dick:

Following receipt of your memorandum, 1510 (250), in which you summarized our meeting of 24 February 1988, I see that we will have to modify our schedule for the first set of flights beginning 18 April 1988. In order to immobilize and examine the mares from which we removed collars in January 1988 in Stone Cabin Valley (see item 2 of your memorandum), we will need to work two days in that study area.

I telephoned Tom Pogacnik of the Tonopah office and suggested that I conduct my regular search and count on 18 April. During that work I will note the location and structure of bands containing mares from which we removed collars in January. April we could go back out to the study area and immobilize previously located mares. Thus, it will be necessary to have the veterinarian present only on 19 April. Tom concurred with that suggestion.

That change of plans will necessitate a modification of the remainder of that set of flights. A complete schedule is as follows:

18,19 April Stone Cabin Valley 20 April Wassuk Mountains 21,22 April Clan Alpine Mountains 23 April Flanigan 24 April Beaty Butte

Our flights in the Clan Alpines 7-9 March 1988 suggests that 2 days may be insufficient time to thoroughly search that study area. Due to the extra effort in Stone Cabin Valley on the 18 April set of flights, I plan to restrict my search to 2 days in the Clan Alpines; however, future flights may have to be extended. Also scheduling around military air operations may present future problems in that area. These scheduling problems

Item 4b of your memorandum may present a slight conflict for a study. As you are aware, personnel from the Battle Mountain District, Tonopah office, attached radio collars to several horses in Reveille Valley during summer 1986. I assume these RHA. Item 4b of your memorandum may present a slight conflict for our

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horses are still collared. Because some of the collared horses from Stone Cabin Valley have moved over to the Hot Creek area, it is possible that some of the horses BLM collared in Reveille Valley have moved north into Hot Creek. It would be unnecessary, and even undesirable, to have these horses released in Stone Cabin Valley.

Yesterday, I telephoned Tom Pogacnik and Rodger Bryan, Horse Specialist in the Battle Mountain District, to see if I could learn the numbers and frequencies on the collars BLM had attached. Both of them were not in their present positions in summer 1986 and were not familiar with the operation; in fact, Rodger had not been informed the collars had been attached until I asked him for the information. Neither could readily locate the information I had requested.

I contacted Advanced Telemetry Systems, Bethel, Minnesota, from whom the collars were purchased. They informed me that the collars were not numbered and gave me a list of frequencies, which are listed below (all are in MHZ):

160.012 160.078 160.022 160.086 160.036 160.096 160.044 160.106 160.066 160.116

Considering recently discovered problems resulting from tight collars in our study, it would be to BLM's interest to determine the location and status of the horses wearing these collars. I would also be interested in the locations of these horses. Indeed, if these horses are not going to be monitored regularly, the collars should be removed.

I have years of experience locating radio signals, particularly from the air, and would be happy to assist BLM in locating these horses should you so desire. My receivers are restricted to 164 and 165 MHZ; thus BLM receivers would be needed to locate these horses. Should you want to remove the collars by darting the horses, Ed Plotka has the necessary DEA documentation to purchase the drugs we use, and we would assist in any way we could.

Sincerely,

There C. Carl

Thomas C. Eagle

cc: Linda DeRamus
Les Sweeney
Tom Pogacnik
Tim Reuwsaat
Nancy Ryan
Ed Plotka
Don Siniff

On 3/23/88 & learned from Melt Free that more of the above collars had

over been mounted on animals. of

notified Tom Eagle of This on

3/23/88. PM Stank

15 March 1988

1575 Akard Dr. Reno, NV 89503

Dick Stark
BLM (250)
18th and C St. NW
Washington, D.C. 20240

Dear Dick:

Attached is a summary of the flights we made 7-10 Mar 88 to examine and adjust mis-fitting collars as identified in the Carson City District Manager's memorandum of 28 January 1988. Because we exhausted our supply of the immobilizing agents before the job was completed, this report covers only the Clan Alpine Mountains and a portion of the Flanigan study area. We have purchased additional immobilizing agents and will complete the effort 28 and 29 March 1988.

As you are aware, we were not authorized to conduct this work until our meeting in Washington on 24 February. Thus, the costs for this operation were not included in the budget statement we prepared for that meeting.

Sincerely,

10-

Thomas C. Eagle

cc: Tim Reuwsaat Linda DeRamus Ed Plotka Don Siniff John Tester

STATUS OF IMMOBILIZED HORSES

We flew over the Clan Alpine study area on 7-9 March 1988 where we counted horses and examined collars. We counted a total of 864 adults and 17 foals. Among the adults were 179 collared horses (98 with radio collars). This number is of 272 possible sightings (131 radio collars). We identified three horses with collars between the eyes and ears (Category 5 in the Carson City District Manager's report of 28 January 1988). We identified two additional horses with collars that appeared to be causing injury to the necks of the horses to which they were attached (Category 4).

In October 1987 located appoximately 5 collared horses in the Augusta Mountain HMA. When we started to search that area for possible problem collars on 9 March 1988, the Project Inspector instructed us to stay out of that area because our monitoring efforts might inhibit the round-up scheduled for the Augusta Mountain HMA in summer 1988.

The following is the status of the horses we immobilized:

644 -- Adult male, category 5 collar. We saw this horse's band high on a ridge, and it contained a foal. I decided the best alternative was to dart the stallion while the band was still on the ridge rather than moving them to lower ground and possibly causing the foal to be abandoned. While under influence of the drug, but before complete immobilization, the horse fell over a steep drop and died. The collar had caused superficial injury to the forehead and at the jawline.

622 -- Adult male, category 5 collar.
Adjusted the collar, and applied antiseptic to the slight injury at the jawline. Released in good condition.

975 -- Adult male, category 5 collar.

Adjusted collar, no injury present. Released in good condition.

475 -- Adult male, possible category 4 collar. Adjusted collar, no injury present. Released in good condition.

370 -- Adult female, possible category 4 collar (turned upside down). No injury, turned collar back over, did not change

tightness of collar. Released in good condition.

We moved to the Flanigan study area on 10 March 1988 and counted a total of 129 horses, all of which were adults. Because we ran out of drug in this area, the count is incomplete. We saw a total of 42 collars, 29 of which had no numbers or the numbers were unreadable. We immobilized 6 horses with category 5 collars and examined and adjusted or removed the collars.

Following is the status of these 6 horses:

Unident. male (Bay, no numbers) -- Removed collar, no injury. Released in good condition.

10 -- Adult female. Adjusted collar, no injury. Released in good condition.

Unident. female (Gulla, no numbers) -- Removed collar, no injury. Released in good condition.

Unident. male (Graying dun, no numbers) -Removed collar, treated slight injury with
antiseptic. Released in good condition.

Unident. male (Sorrel, no numbers) -- Removed collar, no injury. Released in good condition.

66 -- Adult male. (Collar read _6, later determined to be 66, the 6 was coming off of the collar) Removed collar, no injury. Lethargic after reversal of drug.

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U.S. DEPARTMENT OF THE INTERIOR. BUREAU OF LAND MANAGEMENT

Form 1510-57 (January 1986) (formerly MT 9100-1)

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