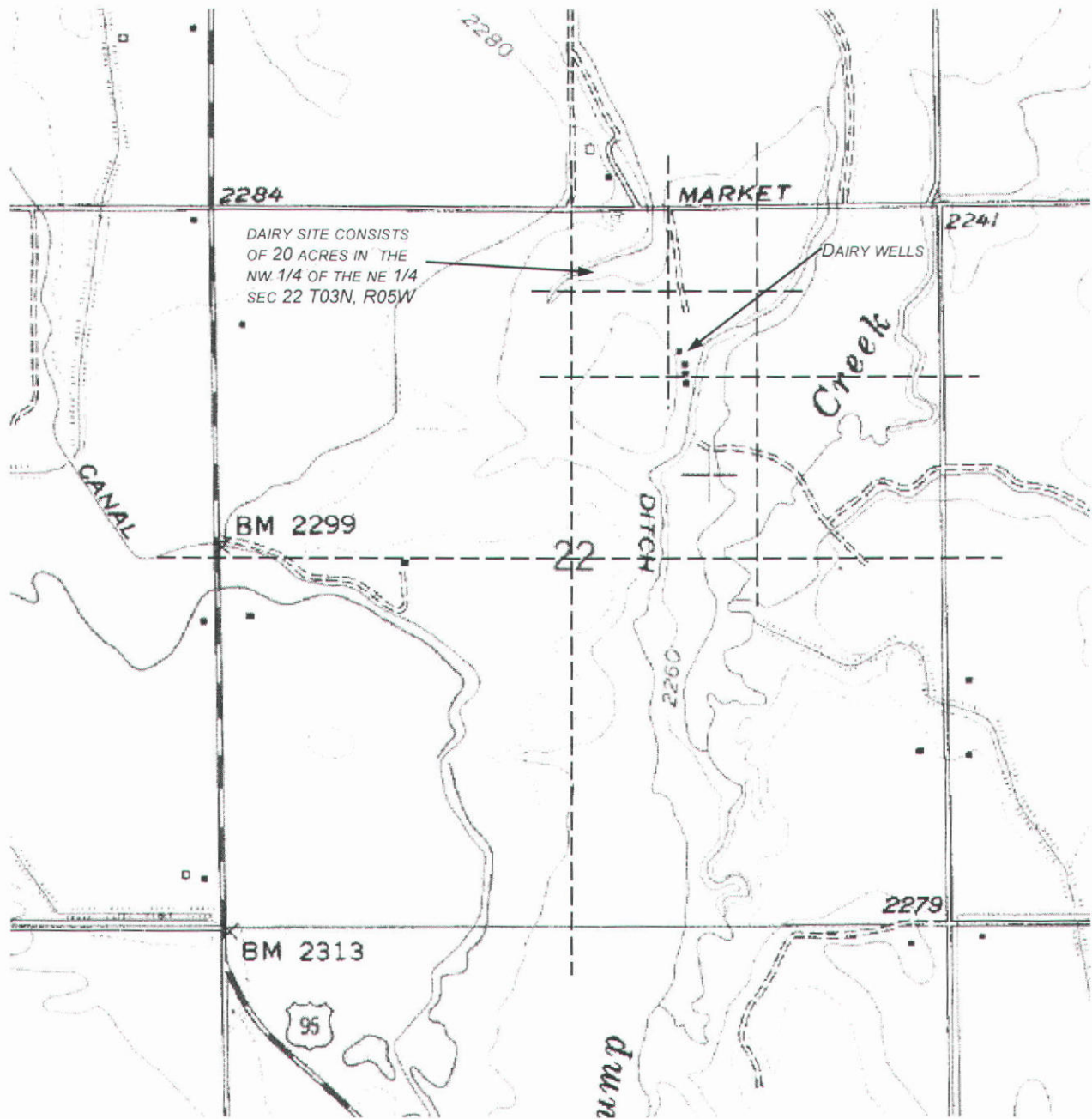
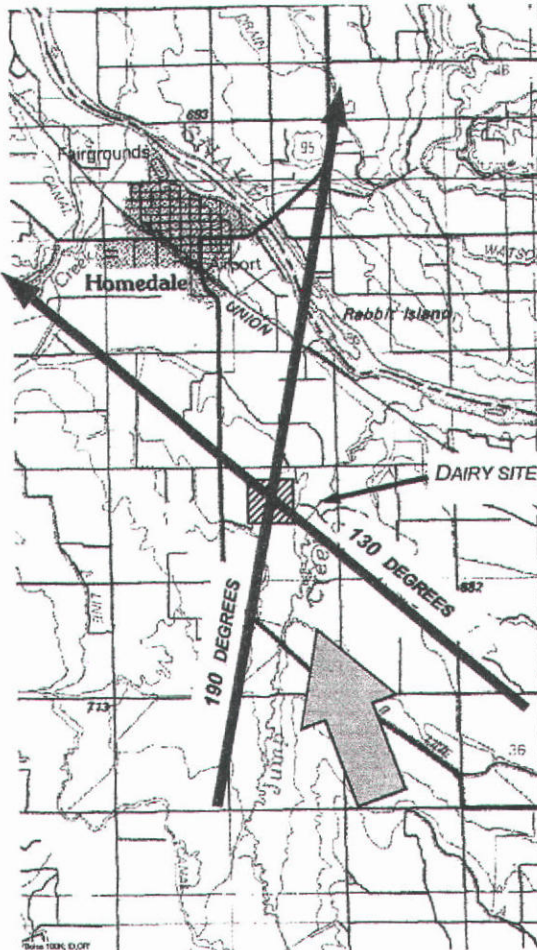


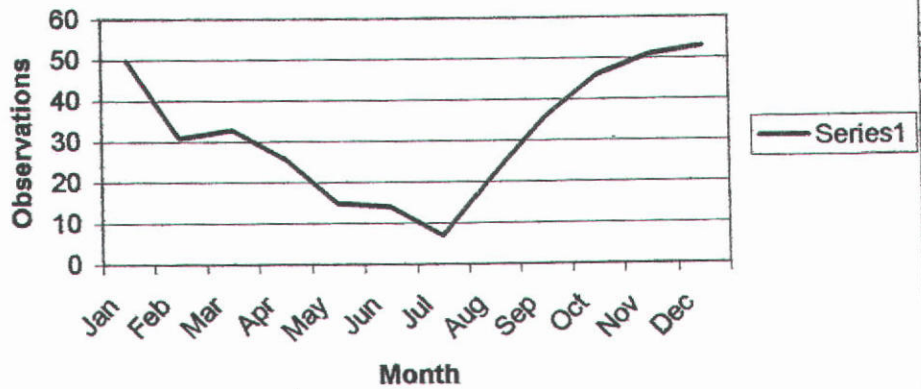


DAVE WILLIAMS	VICINITY MAP	
1103 MARKET STREET	SCALE 1" = 1200'	
HOMEDALE ID 83628		PREPARED BY
		DARWIN VANDER STELT
		MAR 16 2004

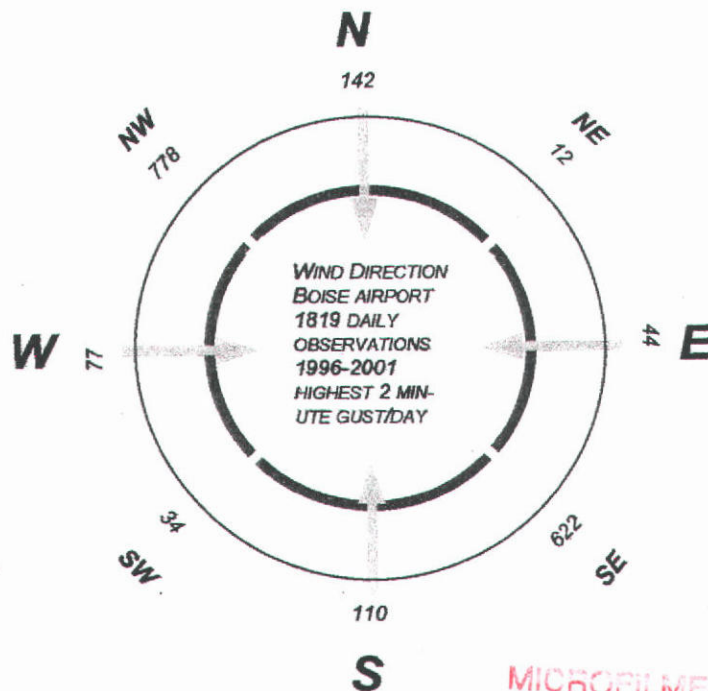
WIND DIRECTION



Observations of SE wind last 5 years



AT RISK ZONE= WIND FROM 130°-190° FROM TRUE NORTH, LESS THAN 20 MPH VELOCITY.
1819 OBSRVATIONS JAN 1996- JAN 2001:
398 OBSERVATIONS OR 28 % WERE FROM THE AT RISK ZONE



DAVE WILLIAMS	WIND DIRECTION
1103 MARKET STREET	PREPARED BY
HOMEDALE IDAHO 83628	DARWIN VANDER STELT

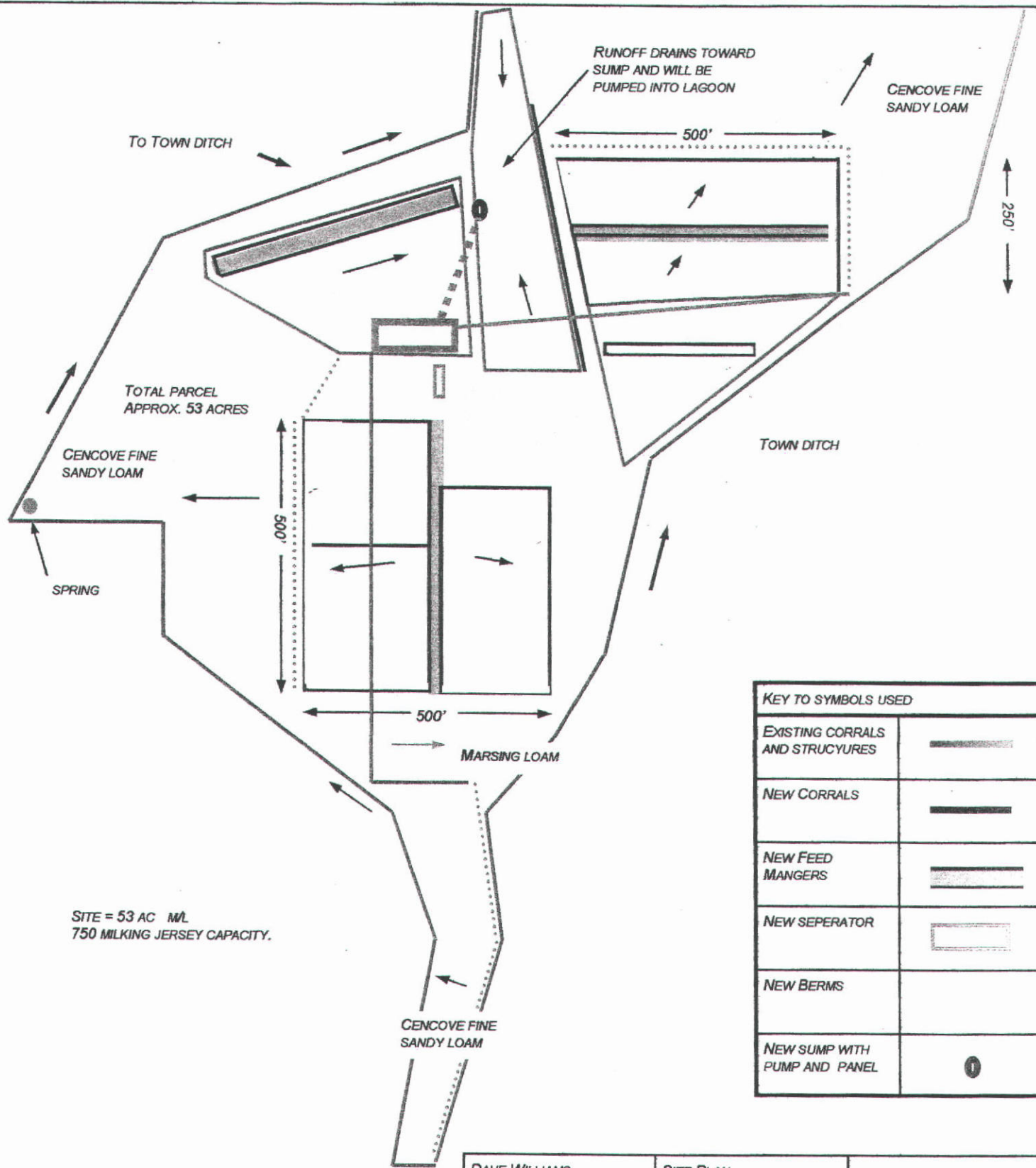
DIRECTION*	DAYS
N	142
NE	12
E	44
SE	622
S	110
SW	34
W	77
NW	778

MICROFILMED *DIRECTION FROM WHICH WIND BLEW

MAR 16 2004

MARKET ROAD

APPROX 2032 10 INTERSECTION WITH JUMP CREEK ROAD



TOTAL PARCEL
APPROX. 53 ACRES

CENCOVE FINE
SANDY LOAM

SPRING

SITE = 53 AC M/L
750 MILKING JERSEY CAPACITY.

CENCOVE FINE
SANDY LOAM

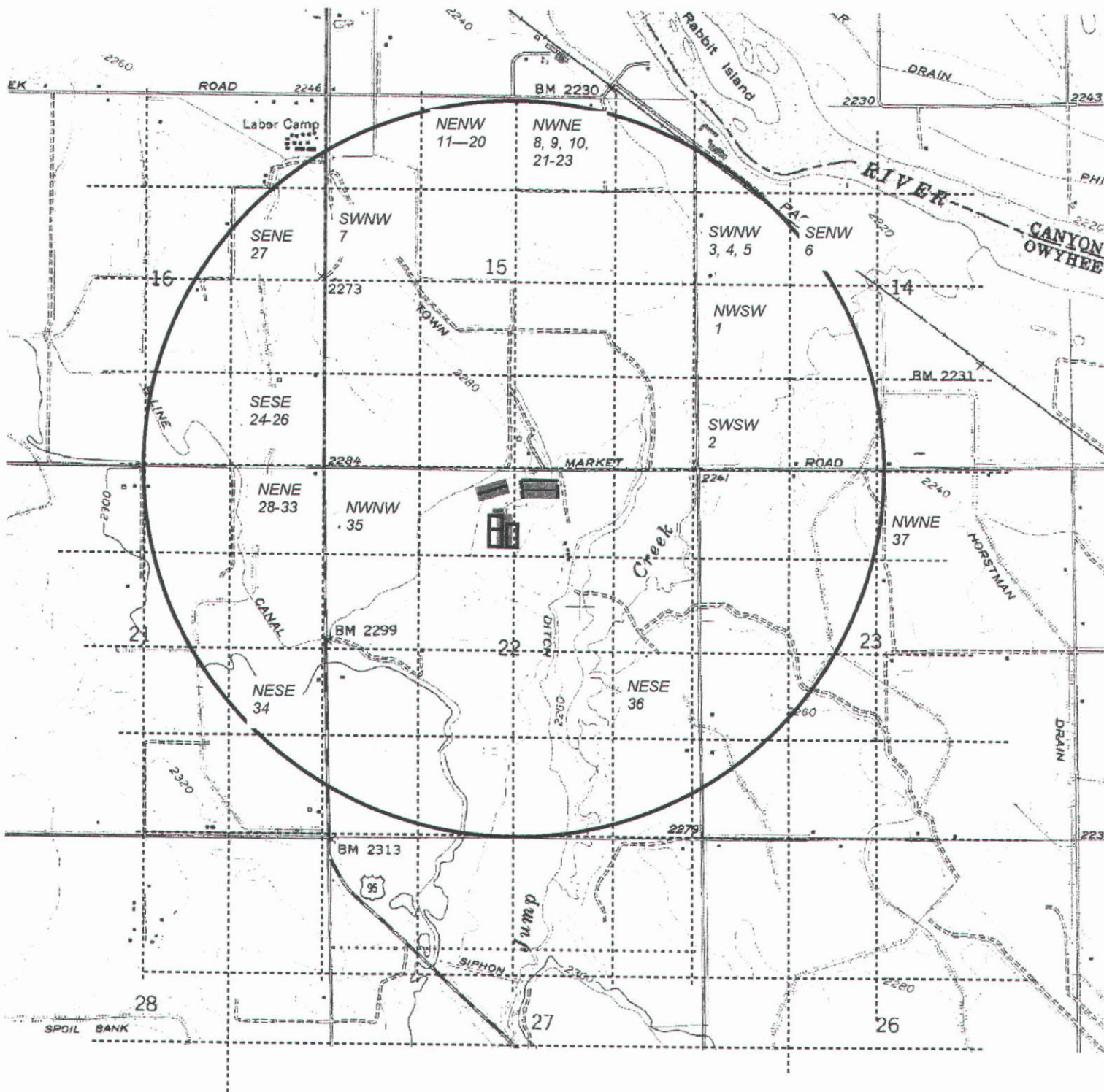
MARSING LOAM

KEY TO SYMBOLS USED	
EXISTING CORRALS AND STRUCTURES	
NEW CORRALS	
NEW FEED MANGERS	
NEW SEPERATOR	
NEW BERMS	
NEW SUMP WITH PUMP AND PANEL	



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MAR 16 2004

DAVE WILLIAMS	SITE PLAN	
1103 MARKET STREET	SCALE 1"= 250'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT



DAVE WILLIAMS	WELLS WITHIN 1 MILE RADIUS	
1103 MARKET STREET	SCALE 1"= 2000'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT

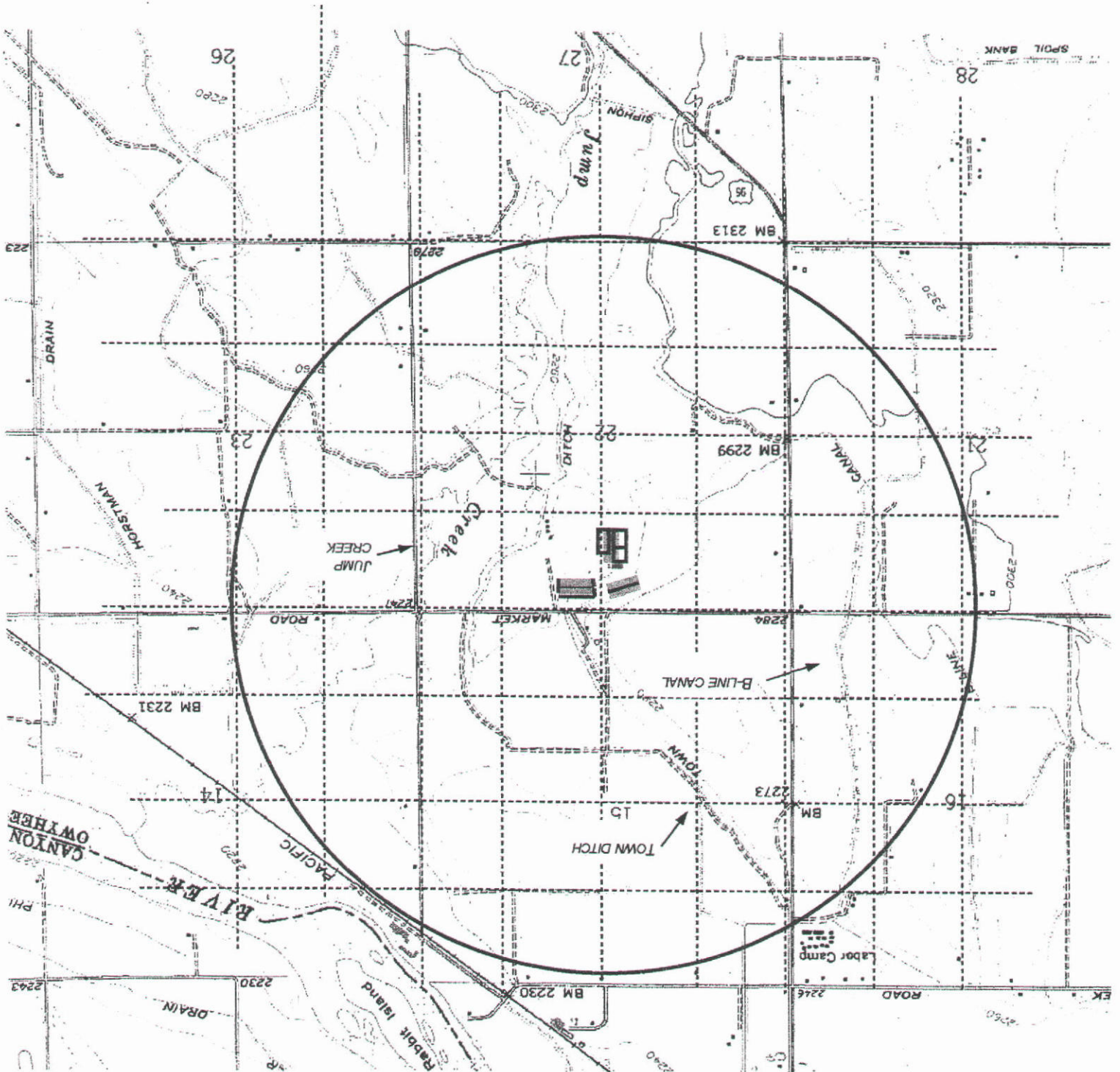


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MAR 16 2004

MAR 16 2004

DAVE WILLIAMS	MAP OF WATERWAYS	
1103 MARKET STREET	SCALE 1"=2000'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT



The Owyhee Avalanche

P.O. BOX 97 • HOMEDALE, ID 83628 • 208/337-4681

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO)
) ss
COUNTY OF OWYHEE)

I, Joe E. Aman, being first duly sworn, depose and say:

1. That I am a citizen of the United States of America, and at all times hereinafter mentioned was and now over the age of twenty-one years, not a party to nor interested in the proceedings hereinafter mentioned.

2. That during the time of the publication of the notice hereinafter mentioned, I was and now am the publisher of The Owyhee Avalanche, a newspaper of general circulation printed and published weekly, on Wednesday of each and every week, in the City of Homedale, County of Owyhee and State of Idaho.

3. That the said The Owyhee Avalanche has been printed and published continuously and uninterruptedly in said County during a period of more than seventy-eight weeks prior to the first publication of the attached notice.

4. That said notice of which a printed copy, taken from said newspaper, is hereto affixed, was published in the regular issue thereof, and not a supplement thereto, in

said newspaper, in TWO (2)
(consecutive) calendar weekly issue(s) of said newspaper, in the following date(s):

May 2 & 9, 2001

SIGNED: Joe E. Aman

STATE OF IDAHO)
COUNTY OF)

On this 30th day of May in the year of 2001 before me, a

Notary Public, personally appeared JOE E. AMAN
known or identified to me to be the person whose name subscribed to the within instrument,
and being by me duly sworn, declared that the statements therein are true, and acknowledged
to me that he executed the same.

Shirley McWhorter
Notary Public for Idaho

Residing at Homedale, Idaho

My commission expires: 10/10/06

APPLICATION FOR PERMIT

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

57-11585

DAVE WILLIAMS

1103 MARKET STREET

HOMEDALE ID 83628

Point(s) of Diversion NWNE

S22 T03N R05W OWYHEE
County Source GROUND
WATER

Use: STOCKWATER 01/01
To 12/31 0.71 CFS 32 AFA

Use: COMMERCIAL 01/01

To 12/31 1 CFS 32 AFA

Use: DOMESTIC 01/10 To
12/31 0.04 CFS 32 AFA

Total Diversion: 1 CFS 32
AFA

Date Filled: 03/19/2001

Place of Use:

STOCKWATER

T03N R05W S22 NWNE

Place of Use:

COMMERCIAL

T03N R05W S22 NWNE

Place of Use: DOMESTIC

T03N R05W S22 NWNE

Remark: Applicant agrees to
mitigate consumptive use in
the future as needed.

Permits will be subject to all
prior water rights. Protests
may be submitted based on the
criteria of Sec 42-203A, Idaho
Code.

Any protest against the approval of this application must be filled with the Director, Dept. of Water Resource, Western Region, 2735 Airport Wy, Boise ID 83705 together with a protest fee of \$25.00 for each application on or before 05/21/2001. The protestant must also send a copy of the protest to the applicant.

KARL J. DREHER,
Director

5/2 & 9/01

RECEIVED

JUN 01 2001

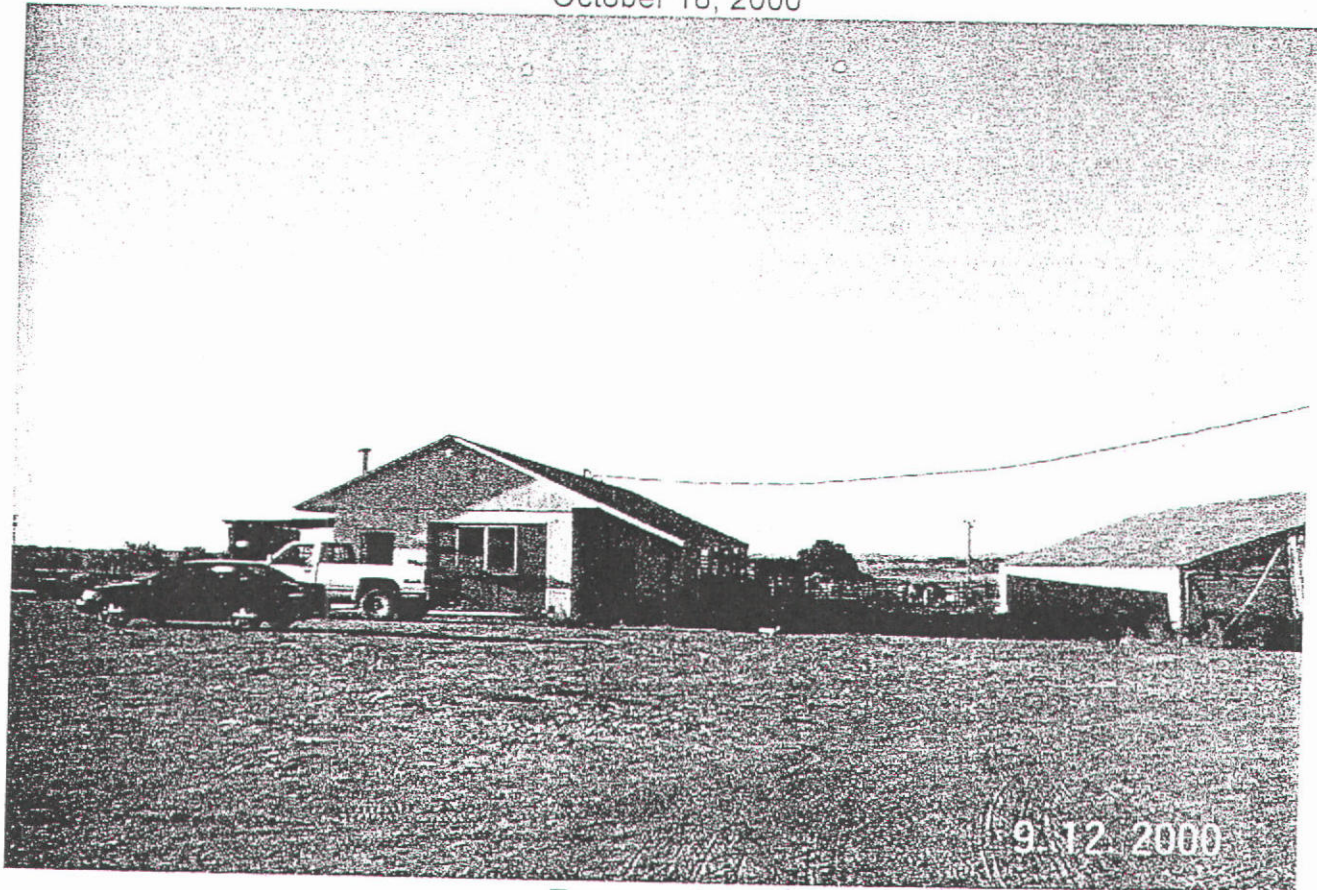
WATER RESOURCES
WESTERN REGION

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MAR 16 2004

Nutrient Management Plan
for
Owyhee Dairy

October 18, 2000



Prepared for:

David Williams
T3N R5W Sec. 22
Homedale, ID 83628
(208) 337 - 4226

Planner:
Steve Thomas
1238 Desert Glen Rd Adrian, OR 97901
Phone: 541-339-3602 Cell: 208-337-8164

MICROFILMED
MAR 16 2004

IN THE MATTER OF PERMIT NO.)
57-11585 IN THE NAME OF)
DAVE WILLIAMS)
)

MAR 15 2004

RECEIVED

JAN 26 2004

WATER RESOURCES
WESTERN REGION

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

PROOF OF BENEFICIAL USE

RECEIVED
JAN 28 2004
Department of Water Resources

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner.

1. Permit No 57-11585 Telephone No 208-337-4226
2. Name of Permit Holder(s): DAVE Williams
3. Mailing Address: 3677 Market Rd
City Homedale State ID Zip 83628
4. Source of Water: Ground Water If **GROUNDWATER** (well), Date Drilled: mo. Previous to 1996 farm purchase
Well Driller: _____ Drilling Permit Number: _____
5. Use(s) (as authorized by the water right permit):
Domestic (No. of households): 1 / ~~0~~ Stockwater (No. and type of stock): 1140 Dairy Animal Units
Irrigation (No. of acres): 0 Other: COMMERCIAL (DAIRY)
6. Total rate of diversion and/or volume for which proof is submitted: 1 cfs OR 250 acre-feet
7. Measuring Device Requirement: (refer to the approval conditions on your permit and respond accordingly)
(This question is not optional Please check either yes or no Proofs returned not checked accordingly, will be considered incomplete)
Measuring Device: Is a measuring device required? Yes _____ or No X
Has the measuring device been installed? Yes _____ or No X
8. Fee Enclosed: \$ 100 (See Fee Schedule on back of the instructions for filing proof of beneficial use)
9. Person to contact to accompany the Department representative during field examination of the water system
Name: DAVE Williams / OWNER Telephone Number: 337-4226
Address: 3677 Market Rd Homedale IDAHO 83628
10. The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted. I agree to relinquish any undeveloped portion of the permit to the State of Idaho.
Signature of permit holder: [Signature] / OWNER Date: 1/22/2004
(include your title, if on behalf of company or organization)

Dave Williams visited Western Region office on 1/22/04 after receiving 1/9/04 Taper Notice letter to inquire what needed to be done next. I advised he needed to submit Proof A S A P. Scott King 1/22/04

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 57-11585

Priority. March 15, 2001

Maximum Diversion Rate: 1.00 CFS

This is to certify, that DAVE WILLIAMS
1103 MARKET ST
HOMEDALE ID 83628

has applied for a permit to appropriate water from:

Source: GROUND WATER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
STOCKWATER	01/01 to 12/31	0.71 CFS
COMMERCIAL	01/01 to 12/31	1.00 CFS
DOMESTIC	01/01 to 12/31	0.04 CFS

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NW¼NE¼, Sec. 22, Twp 03N, Rge 05W, B.M., OWYHEE County
GROUND WATER NW¼NE¼, Sec. 22, Twp 03N, Rge 05W, B.M., OWYHEE County

PLACE OF USE: STOCKWATER, COMMERCIAL, and DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N 05W 22		X															

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before January 01, 2004.
2. Subject to all prior water rights.
3. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
4. The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.
5. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality standards of the Department of Environmental Quality.
6. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to determine the amount of water diverted from power records and shall annually report the information to the Department.
7. Domestic use is for 1 home.

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MAR 16 2004

State of Idaho
Department of Water Resources
Permit to Appropriate Water
NO. 57-11585

8. Stockwater use is for 1140 dairy animal units, comprised of approximately 750 milking cows plus replacements
9. Commercial use is for a dairy

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 2nd day of January, 2003.


for KARL J DREHER, Director

MICHAEL
MAR 16 2004

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT
TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF IDAHO

Application 57-11585

RECEIVED

Phone 337-4226 DEC 18 2002

Department of Water Resources

- 1 Name of Applicant Dave Williams
Mailing address 1103 Market Street Homedale ID 83628
- 2 Source of water supply Groundwater which is a tributary of NA
- 3 Location of point of diversion is Township 03N Range 05W Sec 22, in the SE 1/4, of the NW 1/4, of the NE 1/4, Govt Lot _____, B M _____, Owyhee County, additional points of diversion if any NA

- 4 Water will be used for the following purposes

DW
Amount 29.68 / 1.0 cfs for stockwater purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per annum)

DW
Amount 3.51 / 1.0 cfs for commercial purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per annum)

DW
Amount .04 cfs for domestic purposes from 1/1 to 12/31 (both dates inclusive)
(cfs or acre-feet per annum)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)

- 5 Total quantity to be appropriated is (a) 1.0 (cfs) and/or (b) 33.19 (acre-feet per annum)

- 6 Proposed diverting works

a Describe type and size of devices used to divert water from the source Two wells with submersible pumps already in use.

b Height of storage dam _____ feet, active reservoir capacity _____ acre-feet, total reservoir capacity _____ acre-feet

c Proposed well diameter is NA inches, proposed depth of well is NA feet

d Is ground water with a temperature of greater than 85°F being sought? No

e If well is already drilled, when? NA, Drilling firm, NA Well was drilled for (well owner) NA, Drilling Permit No. NA

- 7 Time required for completion of works and application of water to proposed beneficial use is 1 years (min 1 year)

- 8 Description of proposed uses (if irrigation only, go to item 9)

a Hydropower, show total feet of head and proposed capacity in kW

b Stockwatering, list number and kind of livestock 750 dairy cows, 750 head young stock (see att. A)

c Municipal, show name of municipality

d Domestic, show number of households 1

e Other, describe fully. Commercial (see attachment A)

MICROFILMED

MAR 16 2004

**STATE OF IDAHO
APPLICATION FOR PERMIT**

PAGE 2 OF _____

TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF IDAHO

ID. NO. _____

9 Description of place of use

- a If water is for irrigation, indicate acreage in each subdivision in the tabulation below
- b If water is used for other purposes, place a symbol of the use (example D for Domestic) in the corresponding place of use below See instructions for standard symbols

TWP	RGE.	SEC	NE 1/4				NW 1/4				SW 1/4				SE 1/4				TOTALS
			NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	
03N	05W	22		S															
				C															
				D															

10. Describe any other water rights used for the same purposes as described above 57-10021 is used for stockwater, commercial, and domestic uses on the same farm.

- 11 a Who owns the property at the point of diversion? Dave Williams
- b Who owns the land to be irrigated or place of use? Same
- c If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing

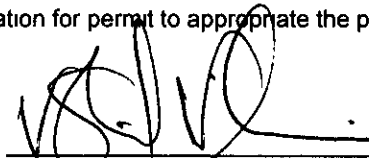
12. Remarks: _____

- 13 **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½"x11" map clearly identifying the proposed point of diversion, place of use, section #, township & range (A photocopy of a USGS 7 5 minute topographic quadrangle map is preferred)

See attachments:

- A Quantity calculations
- B Map
- C Nutrient Management Plan detailing wastewater handling

BE IT KNOWN that the undersigned hereby makes this application for permit to appropriate the public waters of the State of Idaho as herein set forth



Signature of Applicant (and title, if applicable)

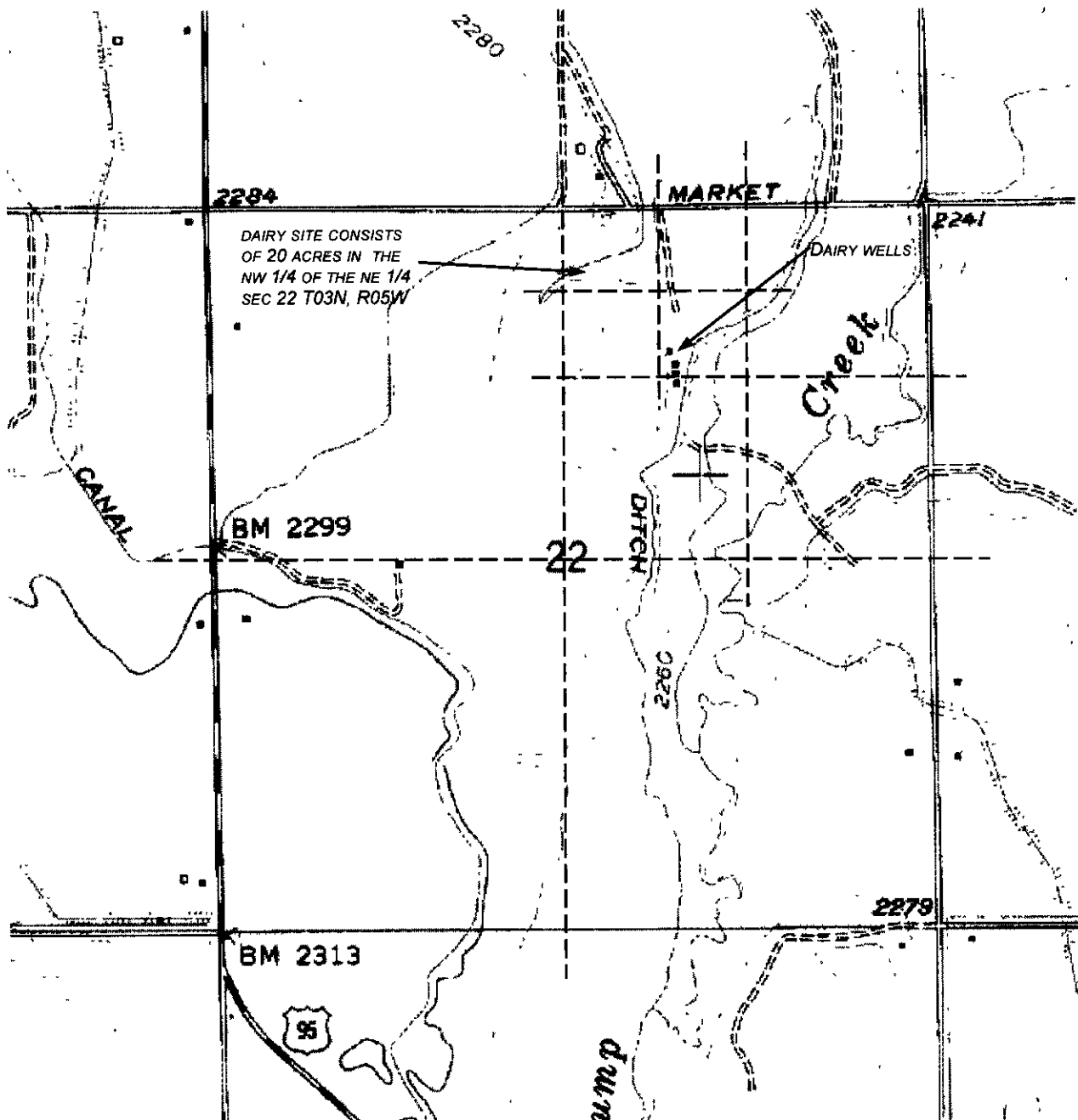
Received by ly Date 3/15/01 Time 2:00 Preliminary check by DAN

Fee \$ 250 Receipted by # W027453 Date 3/15/01

Publication prepared by AT Date 5-2-9-01 Published by OWYHEE AVALANCHE

Publication approved LM Date 6-8-01

MAR 16 2004



DAVE WILLIAMS	VICINITY MAP	
1103 M MARKET STREET	SCALE 1" = 1200'	
HOMEDALE ID 83628		PREPARED BY MICHAEL J. D.
		DARWIN VANDER STELT MAR 15 2004

REQUEST TO PROCESS

COMPLETE REQUEST IF YOU WANT YOUR APPLICATION TO BE PROCESSED USING ONE OF THE
THREE ALTERNATIVES BELOW

Name of Applicant

DAVE WILLIAMS

Mailing Address

1103 MARKET STREET

HOMEDALE ID 83628

Application No.
(if known)

☐ IN LOCAL PUBLIC INTEREST

Yes, I want my application processed and before it is advertised, I will amend my application to demonstrate that the proposed appropriation is in the local public interest including the need to preserve flows in the Snake River during the migration periods of anadromous fish.

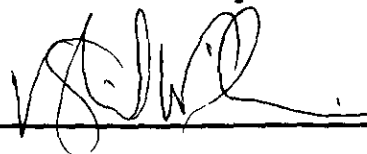
☐ PROPOSE MITIGATION NOW

Yes, I want my application processed and before it is advertised, I will amend my application to include proposed mitigation to offset anticipated depletions in the Snake River during periods of anadromous fish migration.

☒ WILL AGREE TO MITIGATION IN THE FUTURE IF NECESSARY

Yes, I want my application processed at this time, and I will accept a condition of approval that will require mitigation should the Director of the Idaho Department of Water Resources determine that mitigation is necessary to offset depletions from this appropriation to flows in the Snake River during periods of anadromous fish migration. I understand that mitigation is not required now but may be needed in the future. I also understand that the Director will not require mitigation until I have an opportunity to review the process by which the need for mitigation is established and the amount of water required is quantified.

Signature



Date

3/15/2001

Please return this form to:

Idaho Dept. of Water Resources
Western Regional Office
2735 Airport Way
Boise, ID 83705-5082

MILWAUKEE

MAR 16 2001

Attachment A

Daily Fresh Water Requirement For Dairy Facility Worksheet

For **Dave Williams**

Holstein weight 1400
Jersey 1000

Drinking Water Estimates (see Table 1 & 2)

			Size				
		Number	Use/day	Adjustment	Use/day	Total	
				71%		Gal/Day	Total
							Gals/Yr.
							Acre-feet/Yr
							(AF/a)
Milking Cows		650	35	25 0	22750	22750	
Dry Cows		100	12	8 6	1200	1200	
Total Cows		750			0	23950	8,741,750
Heifers							26 83
	Age	% of Herd	Number	Use/day	71%	Total	
	16-24 mo	0 38	285	12	8 6	2442 9	
	13-15 mo	0 12	90	9	6 4	578 6	
	9-12 mo	0 17	127 5	7	5 0	637 5	
	5-8 mo	0 17	127 5	6	4 3	546 4	
	3-4 mo	0 08	60	5	3 6	214 3	
	0-2 mo	0 08	60	3	2 1	128 6	
Total Heifers			750			4548 2	1,660,098
							5 09

Total Herd Drinking Water

Deduct Current water license for 200 stock cows	2000	730000	31.92
New stockwater needed			2.24
			29.68 afa

Milk House and Parlor Estimate (see Table 4)

Item	Gals/Op	x's/day	Gals/day			
Bulk Tank	120	1	120			
Pipeline	60	6	360			
Backflush	0 5		0			
Cleanup	1000	2	2000			
Cow Prep	0 5	2	650			
Plate Cooler(ignore if recycled)						
Total Milk House and Parlor Water Used:			3130	1,142,450	3.51	
Total Gals/Day				31628		
Total Fresh Water Diverted Annually (af/a consumptive use)					35.4	
Stock water needed				29.68	afa	
Commercial water needed				3.51	afa	
				33.19	afa	
Current right 57-10021	0 05	cfs =	22.50	total		
Current pump capacity			67	gpm		

MAR 1 5 2004

MAR 1 5 2004

Prepared by
Darwin Vander Stelt

MEMORANDUM

TO: Lori Graves

FROM: Darwin Vander Stelt, preparer

DATE: March 13, 2001

RE: Dave Williams, Application for permit to appropriate water.
Current rights 57-10021

RECEIVED

MAR 15 2001

WATER RESOURCES
WESTERN REGION

The applicant wishes to expand the dairy beyond the size allowed by his current water right. The current right is for stockwater for 200 range cattle, and the applicant expects to have 750 cows and 750 heifers within the next 5 years.

The applicant does not wish to amend or expand the current water right. He prefers to apply for a new water right, in addition to the existing right, particularly in view of the risks associated with a late priority date and the required mitigation agreement.

DOCUMENTS AND APPLICATION PREPARATION

- A Dairy Water Requirement Worksheet
- B Map of vicinity
- C Current nutrient management plan showing disposition of return flows

The required response to the four issues in Idaho Code Section 42-222 will be provided after advertising is complete.

I am happy to answer any further questions about this application. Thank You!


Darwin



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Boise, ID 83706 - P.O. Box 83720, Boise, ID 83720-0098
Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwr.state.id.us

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

February 11, 2004

DAVE WILLIAMS
3677 MARKET RD
HOMEDALE ID 83628

PROOF ACKNOWLEDGMENT LETTER

RE: PERMIT NO. 57-11585

Dear Permit Holder:

The department acknowledges receipt of the proof of beneficial use form and examination fee submitted for the above referenced permit. Enclosed is an order reinstating the permit advancing the priority since proof was submitted after the proof due date. The next step in the process of developing a water right is for the department to conduct a field examination to determine and confirm the use being made of the water. The regional office staff will contact you when that examination is to be conducted. At the time the examination is conducted the system must be in operation, otherwise this permit will be of no force nor effect.

Be advised that Section 42-248, Idaho Code, requires you or the owner of these water rights to maintain current ownership and address records on file with the department. Forms to file a change of ownership of a water right and/or a change in the address of the water right owner are available from any department office.

If you have questions concerning the field examination, please contact the **Western** Regional Office of the department in Boise at (208) 334-2190.

Sincerely,

Deborah J. Gibson
Administrative Assistant
Water Allocation Bureau

Enclosure

c: IDWR - Region (w/encl.)

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MAR 16 2004

ANALYSIS SHEET FOR PROOF OF BENEFICIAL USE

Permit No.: 57-11585

Reviewed By: dgibson

Date February 10, 2004

	<u>Yes</u>	<u>No</u>		<u>Yes</u>	<u>No</u>
Proof received timely?		X	Drilling permit required?	X	
License examination fee required?	X		Drilling permit No.:		
Appropriate fee submitted?	X		Drilling permit upgrade needed?		
Receipt No :		W027453, W031265	Well driller's report filed?		X
Additional Amount Due			Measuring device required?		X
Name and address same as permit?		X	Measuring device installed?		X
Are the water uses correct?	X		Measure device waiver requested?		

Priority Calculation

Date proof received		01/26/2004
Date proof due	-	01/01/2004
Lapse notice sent	-	01/09/2004
No of days late	=	25
Holiday allowance	+	
Priority date	+	03/15/2001
New priority date	=	04/09/2001

Deficiencies of Actions Items

Acknowledge proof. Reinstate permit and advance priority to 4/9/2001. *Update database address record. dg -*

261111 MARKET

HOMEDALE ID

99600 0908

Item Service Requested

57-11585

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P O Box 83720
Boise, Idaho 83720-0098

Not Known

PRESORTED
FIRST CLASS

RECEIVED

JAN 16 2004

Department of Water Resources



POSTNET
713051

0278

MAOF

MAR 15 2004

Recent Depose Motion 12/20/04

ds

January 9, 2004

DAVE WILLIAMS
1103 MARKET ST
HOMEDALE, ID 83628

LAPSE NOTICE

RE: PERMIT NO. 57-11585

Dear Permit Holder:

You are hereby notified that under the provisions of Section 42-218A, Idaho Code, the above referenced permit has lapsed and is of no further force nor effect. The department provided the proper forms to you in the proof due notice dated October 31, 2003. No further construction or additional development is authorized under this permit unless it is reinstated.

The permit can only be reinstated if you submit an acceptable proof of beneficial use or an acceptable request for extension of time to the department within sixty (60) days of the mailing of this lapse notice. An acceptable proof of beneficial use submittal must include the examination fee or a completed field examination report. A request for extension of time must be accompanied by a fifty dollar (\$50.00) fee.

Enclosed again for your use are a proof of beneficial use form and a request for extension of time form. Please note that only one extension of time can be granted unless the project has not been completed because of lack of a necessary approval by a government agency or by litigation which may bring title to the water in question.

Sincerely,

Gary Spackman

Enclosures

CERTIFICATION OF MAILING
There is no other person or entity who has been notified by the department was
certified by the department by first class mail, return receipt requested to the
holder of the permit on 1/12/04
MIC - [signature]
MAR 12 2004

October 31, 2003

DAVE WILLIAMS
1103 MARKET ST
HOMEDALE, ID 83628

PROOF DUE NOTICE

RE: PERMIT NO. 57-11585

Dear Permit Holder:

One of the conditions of approval of the above referenced water permit was that proof of the extent of your beneficial use must be submitted to this office on or before January 01, 2004. (See last page of your approval permit or your last approved extension request.) Enclosed is a form which when accompanied by the license examination fee or a completed field examination report prepared by a certified water right examiner may be used to submit the required proof.

If you have not fully completed your project, and you or a previous owner of this permit have not received a prior extension of time, you may request an extension of time if the delay is for reasonable cause as provided in Section 42-204, Idaho Code. If you have been prevented from proceeding by a governmental agency or by litigation which might bring title to the water in question, more than one extension of time can be granted. An extension of time request form is enclosed for your convenience.

Either an acceptable proof of beneficial use submittal or an acceptable request for an extension of time must be received by this department on or before the above described proof due date. If neither is received, the department will send you a lapse notice. Within sixty (60) days of the mailing of the lapse notice, the permit will no longer be of any force nor effect.

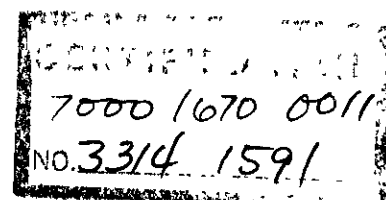
Sincerely,

Deborah J. Gibson, Administrative Assistant
Water Allocation Bureau

Enclosures

MAIL ROOM

MAR 16 2004





State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Boise, ID 83706 - P.O. Box 83720, Boise, ID 83720-0098
Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwr.state.id.us

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

January 3, 2003

DAVE WILLIAMS
1103 MARKET ST
HOMEDALE ID 83628

RE: Permit No. 57-11585

Permit Approval Notice

Dear Permit Holder:

The Department of Water Resources has issued the enclosed permit authorizing you to establish a new water right. Please be sure to thoroughly review the conditions of approval and remarks listed on your permit.

The permit is a PRELIMINARY ORDER issued by the Department pursuant to Section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Enclosed is a form entitled 'Instructions for Proof of Beneficial Use.' Please read the instructions carefully since you must take further action to develop this permit into a licensed water right. Also enclosed is a form entitled 'Proof of Beneficial Use.' If your project is already completed, you should complete and submit this form immediately.

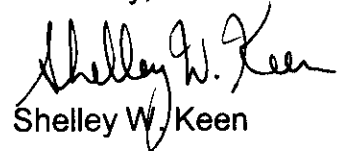
The right to drill a well is not a part of this permit to appropriate water. Beginning in July of 1987, a statute was enacted which requires a drilling permit for new well construction and deepening of existing wells. If the well(s) proposed for use under this water right permit were drilled or deepened after July 1, 1987, a separate drilling permit must be obtained from this Department. Please contact the Ground Water Protection Section located here at this office or our regional office nearest you.

MAILED
MAR 15 2004

Also, please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-327-7946.

Sincerely,



Shelley W. Keen

Water Rights Supervisor

Enclosure(s)

M.C. 111
MAR 15 2006

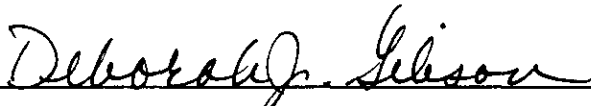
CERTIFICATE OF SERVICE

I hereby certify that on January 3, 2003 I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER(Approved Permit) to the person(s) listed below:

RE: WATER RIGHT NO.

57-11585

**DAVE WILLIAMS
1103 MARKET ST
HOMEDALE ID 83628**


**Deborah J. Gibson
Administrative Assistant**

MIL-11585

MCS 1 5 2004

**EXPLANATORY INFORMATION
TO ACCOMPANY A
PRELIMINARY ORDER**

(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "**Preliminary Order**" issued by the department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below.

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

MICROFILMED
MAR 16 2001

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its issuance if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) the petition for reconsideration is disposed of, or
- (b) the petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

MICROFILMED
MAR 15 2004

MEMORANDUM

Date: January 02, 2003
To: Water Right File 57-11585
From: dgibson
Re: Permit Review

This application is for stockwater & commercial use for a dairy with 750 head of dairy (650 milking and 100 dry) cows and 750 head of heifers, however, the Owyhee county P&Z with review & information provided by Dept. of Ag, DEQ & IDWR, have approved a total of 1140 animal units, therefore, I recommend that the permit be issued for 1140 dairy cows/heifers. A domestic use for one home is also included in my recommendation

Use of water under this application will be combined with water right 57-10021. This right is a decreed water right in the name of Dan & Elva Archabal, with a priority of 4/30/52 for stockwater for 200 head of range cattle and with a domestic use. Additionally, surface water rights are appurtenant to this location with Gem Irrigation District.

Additionally, the application was received and the filing fee receipted by the region on March 15, 2001. However, the receipt date as written closely resembles 3/19/2001, and was entered into the data base as 3/19/2001. The legal notice as published reflected the 3/19/01 received date, which established the priority date as 3/19/01. However, the correct priority date as verified by Dan Nelson at the Western Region on 12/30/02, is 3/15/01, which this permit reflects.

M. J. GIBSON
MAR 16 2004



Idaho Statutes

TITLE 67
STATE GOVERNMENT AND STATE AFFAIRS
CHAPTER 65
LOCAL LAND USE PLANNING

67-6529C. DEFINITIONS. As used in this act, the following definitions shall apply:

(1) "Animal unit" means a unit of measurement for any animal feeding operation calculated by adding the following numbers: The number of slaughter and feeder cattle multiplied by one (1), plus the number of young slaughter or feeder cattle less than twelve (12) months of age multiplied by six-tenths (0.6), plus the number of mature dairy cattle multiplied by one and four-tenths (1.4), plus the number of young dairy cattle multiplied by six-tenths (0.6), plus the number of swine weighing over twenty-five (25) kilograms, approximately fifty-five (55) pounds, multiplied by four-tenths (0.4), plus the number of weaned swine weighing under twenty-five (25) kilograms multiplied by one-tenth (0.1), plus the number of sheep multiplied by one-tenth (0.1), plus the number of horses multiplied by two (2), plus the number of chickens multiplied by one-hundredth (0.01);

(2) "CAFO," also referred to as "concentrated animal feeding operation" or "confined animal feeding operation," means a lot or facility where the following conditions are met:

(a) Animals have been, are, or will be stabled or confined and fed or maintained for a total of ninety (90) consecutive days or more in any twelve-month period;

(b) Crops, vegetation, forage growth or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility; and

(c) The lot or facility is designed to confine or actually does confine an equivalent of one thousand (1,000) animal units or more.

Two (2) or more concentrated animal feeding operations under common ownership are considered, for the purposes of this definition, to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes;

(3) "CAFO site advisory team" shall mean representatives of the Idaho state department of agriculture, Idaho department of environmental quality and Idaho department of water resources who review a site proposed for a CAFO, determine environmental risks and submit a suitability determination to a county. The department of agriculture shall serve as the lead agency for the team;

(4) "Environmental risk" shall mean that risk to the environment deemed posed by a proposed CAFO site, as determined and categorized by the CAFO site advisory team and set forth in the site advisory team's suitability determination report;

(5) "Suitability determination" shall mean that document created and submitted by the CAFO site advisory team after review and analysis of a proposed CAFO site that identifies the environmental risk categories related to a proposed CAFO site, describes the factors that contribute to the environmental risks and sets forth any possible mitigation of risk.

The Idaho Code is made available on the Internet by the Idaho Legislature as a public service. This Internet version of the Idaho Code may not be used for commercial purposes, nor may this database be published or repackaged for commercial sale without express written permission.

[Search the Idaho Statutes](#)

MAR 16 2001

Form 1-202a.
January 2001

AWR DEPARTMENT OF WATER RESOURCES
APPROPRIATION APPLICATION ANALYSIS SHEET

INITIAL REVIEW BY: DAN DATE: 4-13-01 APPLICATION: 57-11585

REQUIRED INFORMATION

- ☒ Name: (If applicant is a corporation or partnership, names and addresses for the director, officers, and other partners must be included.)
- ☒ Address:
- ☒ Source: (See USGS Quad for names of water sources)
- ☒ Point of Diversion: (10 acres for spring, lot & block descriptions for Subdivisions, local name)
- ☒ County:
- ☒ Quantity: (flow and/or volume)
- ☒ Period of use:
- ☒ Nature of proposed use: (Include description of use)
- ☒ Description of diverting works:
- ☒ Time required for beneficial use of water:
- ☒ Place of use or acres irrigated:
- ☒ Map: (show T, R, S, QQ &/or QQQ)
- ☒ Subdivision plat: (for > 1 home in restricted area. $\geq$ 5 homes in non-restricted area)
- ☒ Signature: (If applicant is corp., partnership, or municipality, title of signatory is required)
- ☒ Correct fee paid

RECEIVED

Gov't. Lots:
NO P/D
NO P/U

DEC 1 19 2001

Department of Water Resources

ADDITIONAL INFORMATION

YES ADVERTISE REMARK(S)
(Reviewer identify which remarks)

YES NO

- ☒ Overlapping place of use: (Describe source & relationship to present application on next page.) 57-10021 S. Gem Irrigation District
- ☒ Overlapping point of diversion. 57-10021
- ☒ Critical groundwater area:
- ☒ Groundwater management area:
- ☒ 1992 moratorium:
- ☒ Surface water source, IDFG letter needed.
- ☒ Protected river or minimum flow reach, notify water planning bureau.
- ☒ E-mail to SCA staff: (perennial stream, non-pump diversion &/or any mining).
- ☒ E-mail to Dam Safety staff: (for any storage)
- ☒ Mitigation plan: Check any that apply.
immediate = acceptable plan required and submitted.
☒ future = open areas, acceptance of condition of approval is in file.
- ☒ Send power requirement letter &/or fish farm requirement letter.
- ☒ Power residency affidavit:
- ☒ Diversion greater than 5 cfs or 500 af or irrigation greater than 200 acres: (If yes, attach Large Diversion supplementary analysis sheet.)
- ☐ *REQUEST ADDITIONAL INFORMATION FROM THE APPLICANT

Date Requested _____ Date Response Received _____

PROCESSING

APP. NO. 57-11585

YES NO

In form for advertising:

☐ ☒

Statewide advertising: (> 10 cfs &/or 1000 af)

☒ ☐

Fee amount, receipt number and date recorded on application:

SEND COPIES TO: NOTE IF E-MAIL COMMENT LETTER USED.

YES NO

YES NO

☐ ☐

I.D. Health & Welfare

☐ ☒

U.S. BLM

☐ ☒

I.D. District Health

☐ ☒

U.S. Forest Service

☐ ☒

I.D. Fish & Game

☐ ☒

Water Dist. #

☐ ☒

I.D. Lands

☒ ☐

Water Planning Bureau

☒ ☐Other COCO

CONCERNE CITIZENS OF

Owyhee County

C/O ILENE DOBBIN

Rt. 1 Box 392

MARSH, ID 83639

FINAL REGIONAL PROCESSING REVIEW:

YES NO

☒ ☐

Affidavit of publication received:

☒ ☐

Application published correctly: If not, record action taken.

☒ ☐

Publication dates and paper recorded on application:

☒ ☐Final date for protest 5-21-01☐ ☒

Protests received.

☐ ☒

Recommendations attached:

☐ ☒

Measuring device required:

☐ ☒

Water delivered by water master? District #

☒ ☐Special conditions of approval or cover letter: 046, 121Water right holder shall comply with all applicable health and environmental laws, rules, and regulations.

See below for additional information

Recommended Date or Priority 3/15/02Recommended by: DaysDate: 12/16/02**ADDITIONAL INFORMATION:**See PROOF Report.

BEFORE THE OWYHEE COUNTY PLANNING AND ZONING
COMMISSION

RECEIVED

DEC 06 2002

WATER RESOURCES
WESTERN REGION

Re: Application for Expansion of Dairy

Case No. 02-23

Filed by: DAVID WILLIAMS

FINDINGS, CONCLUSIONS
AND ORDER

The applicant made application with the Owyhee County Planning and Zoning Commission requesting permission to expand an existing dairy. The dairy site is located on Market Road, south of Homedale in Section 22 of Township 3 North, Range 5 West, Boise Meridian, Owyhee County, Idaho. The initial hearing of this application was held on May 2, 2002 and notice of the hearing was published as required by law, and notices mailed to surrounding property owners. Following the first hearing on the application, the Planning and Zoning Commission requested that the Board of Owyhee County Commissioners contact the Idaho State Agriculture Department to have a CAFO Siting Team appointed to review the application in accordance with Idaho Code 67-6529A et seq. A site evaluation was performed by the Siting Team which consisted of representatives from the Idaho Department of Environmental Quality, Idaho Department of Water Resources and the Idaho State Department of Agriculture, a final review was conducted by the Siting Team, and a Suitability Determination was issued. The final report was forwarded by the Board of County Commissioners to the Planning and Zoning Commission who accepted the report into the evidence portion of the application process on October 3, 2002.

FINDINGS

1. The applicant presented evidence in favor of expanding an existing dairy facility from its present capacity of 250 milking Jersey cows to 750 milking Jersey cows with associated young stock. Detailed supplemental information was attached to the written application submitted by applicant that consisted of a copy of the site plan, the nutrient management plan, an operating plan and a copy of a Water Appropriation Application previously submitted to the Idaho Department of Water Resources. Applicant also provided the additional information which was required by the Department of Agriculture to complete the Site Suitability Determination which was:
(1) An Inventory of private and community domestic water wells,

Instrument # 241736

MURPHY, OWYHEE, IDAHO

2002-11-27 10:07:50 No of Pages: 5

Recorded for OWYHEE COUNTY PLANNING AND ZONING

Fee 15.00

CYNTHIA A. EATON

Ex-Officio Recorder Deputy

Index to MISCELLANEOUS RECORDING

FILED

MBP 11 16 2004

irrigation wells, existing monitoring wells, and existing injection wells located within a one (1) mile radius of the dairy, (2) Hydrologic characteristics such as depth to first water yielding zone and first encountered water, direction of ground water movement and gradient sources and estimates of recharge, seasonal variations in water level and recharge characteristics, susceptibility of contamination, and the relation of ground water to surface water; and (3) Water Quality Data, microorganisms, nutrients, pharmaceuticals and organic compounds.

2. The Commission finds that the Suitability Determination determined by the Team is Moderate Risk and the following technical factors contributed in determination of the rating:
 - a. There are two aquifers below the site. The groundwater table is located at 12' or greater for the upper aquifer. Due to the close proximity of Jump Creek and lack of site specific groundwater information, the general groundwater flow direction cannot be determined at this time. Soils data from Natural Resources Conservation Service indicate deep soils in the vicinity of the facility. Average precipitation is 9-10 inches.
 - b. Groundwater quality data within the area suggest median nitrate concentrations in the lower aquifer to be less than two parts per million. Groundwater quality data suggest median nitrate concentration in the upper aquifer to be greater than 10 parts per million. Because the upper aquifer demonstrates first encountered water and increase from domestic and irrigation wells, this data was used to reach the suitability determination.
 - c. The proposal is to expand an existing dairy operation from 350 animal units to 1140 animal units. The new facility will increase the number of animal units within a five mile radius of the facility six percent.
 - d. Primary land use in the area of the facility is irrigated agriculture. An estimated ratio of irrigated agriculture to animal units within a five-mile radius of the facility shows 2.9 acres of irrigated farm ground for every animal unit. The facility will land apply up to 2% of the nutrients produced on the facility. Ninety-eight percent of the nutrients produced by the operation will be exported off site.
 - e. The application for permit for a water right for this dairy is currently on hold until additional information is received. Most of the information needed is included in the CAFO Site Review and the Owyhee county approval process. The application for permit will be limited to 1.0 cfs of water with the volume

limitation to be determined when the water right is licensed. The application for permit only lists the two existing wells currently on site. Applicant will need to file an amendment to add any additional wells or a transfer after the water right has been licensed.

3. The Commission finds that the Siting Team lowered the suitability determination to Low Risk because of mitigation of risk through best management practices and available technology that is being used on the facility and that the following best management practices contributed in determination of the rating:
 - a. Waste transport on this facility is conducted primarily through dry scrape. Nutrients are found primarily in dried manure which is held in open lot corrals and land applied two times a year onto third party cropland.
 - b. A storm water management plan is in the process of being implemented. Once this system is in place, the facility will have primary and secondary forms of containment. This will help eliminate discharges in extreme weather events.
 - c. General cleanliness on the facility indicates that problems associated with pests and odors will be minimal.
4. The Siting Team stated in their report and the Commission finds that any changes or modification in the application or at the site may alter the Suitability Determination.
5. The Commission finds that the Siting Team suggests that individual third parties that utilize nutrients produced by the facility be given the opportunity to develop nutrient management plans in accordance with the Idaho NRCS Nutrient Management Standard.
6. The Commission finds that no one appeared in opposition to the application and there has been no objection by affected landowners in the surrounding vicinity.
7. The Commission finds that the proposed use is compatible with the surrounding vicinity, which is predominately agricultural use.
8. The Commission finds that the Applicant has met the burden of persuasion that he can meet the standards imposed on an operation such as is proposed in his application.

9. The Commission finds that special conditions are necessary mitigate possible adverse impact that such an expansion may create.
10. The Commission finds that the proposed use is desirable, is consistent with the County Plan and that the application should be approved.

CONCLUSIONS

1. The Applicant has met the burden of persuasion and the application is granted to expand the existing dairy facility.
2. The following special conditions are imposed:
 - a. The dairy must comply with and not be in violation of any federal, state or local law.
 - b. Facilities shall be designed and located with full consideration of proximity to surrounding properties, and reduction of such nuisance factors as odor, noise, traffic, flies and other impacts.
 - c. This permit is approved for a "scrape" dairy waste system design. If any other variation (i.e. "flush dairy") is ever considered, the applicant will be required to obtain a new Conditional Use Permit, prior to the beginning of construction.
 - d. The Applicant will work with the Department of Water Resources to develop the water rights and the amount of water necessary to service the facility.
 - e. All manure, feed storage and corrals or other possible contaminant source shall be located a minimum of 100 feet from any wells.
 - f. Lights for the facility shall be directional and shielded to direct the light down and inside the property lines.
 - g. Disposal of dead animals will be completed in accordance with Idaho State regulations.
 - h. For the purpose of distribution of waste, the waste shall remain on the property of the dairy or with land lease contracts with anyone who takes manure. If waste is to be placed on property, other than that under the applicant's control, the applicant will

10/1/00

44.0 3 5 0096

maintain a record of property owners taking the manure/waste. This list will have as a minimum the landowners' name, address, phone number, number of acres, the year manure was taken and the location (nearest crossroads) of the property on which the landowner has agreed to apply manure.

- i. A Nutrient Management Plan must be developed and up-dated according to the regulations of the Idaho Department of Agriculture or appropriate regulating agency.
- j. Applicant and any other person who is associated with, or any future occupant of the property on which the facility is located must be advised that under Idaho law "the right to farm is a natural right and is recognized as a permitted use throughout the State of Idaho". (Idaho Code, 22-4502)

Further, Applicant must recognize and any future occupant of the property must be advised that any agricultural activity which is in existence on lands adjoining or in the vicinity of subject parcel may not be considered a nuisance unless there is improper or negligent operation of the agricultural operation. (Idaho Code, 22-4503)

- k. Access routes from the public road to the various buildings on site will be constructed of all weather surfaces and will provide adequate ingress and egress dimensions necessary for the safe, efficient operation of emergency vehicles, including the types of turnarounds which are approved by the local fire district.

Date issued: 7th day of November, 2002.

Attest: K. Kelly Brach

Sidney Erwin
Sidney Erwin, Chairman

Appeal deadline:

27th day of November, 2002 at 5 PM

MAILED

NOV 11 2002



IDAHO STATE DEPARTMENT OF AGRICULTURE



ENGINEERING SERVICES

August 14, 2002

Harold Tolmie
Owyhee County Board of Commissioners
Courthouse - P.O. Box 128
Murphy, ID 83650-0128

RECEIVED

NOV 18 2002

WATER RESOURCES
WESTERN REGION

RECEIVED

AUG 16 2002

Department of Water Resources

Dear Mr. Tolmie;

The Idaho State CAFO Siting Team has completed its review of the application for Dave Williams' proposed dairy expansion, located at 1103 Market Street in Homedale, Owyhee County. The review was completed in response to a request made by Owyhee County Commissioners in accordance with the IDAPA 02.04.18.

The Team, consisting of representatives from the Idaho Department of Environmental Quality (IDEQ), Idaho Department of Water Resources (IDWR), and the Idaho State Department of Agriculture (ISDA) performed a site evaluation on August 12, 2002 and conducted a final review meeting on the same day. The information evaluated for this facility included the application package provided by your office, IDWR well log information and water right records, IDWR State-wide Ambient Ground Water Quality Monitoring Program network data, USGS water quality data, ISDA Regional Agricultural Ground Water Quality Monitoring Program data, and discussion with the operator during the site visit. The following recommendation is based on the information supplied to the team through the county and site-specific conditions at the time of the evaluation. Any changes or modification in the application or at the site may alter the Suitability Determination.

The Suitability Determination, as determined by the Team, is **Moderate Risk**. The following technical factors contributed in determination of the rating.

- There are two aquifers below the site. The groundwater table is located at 12' or greater for the upper aquifer. Due to the close proximity of Jump Creek and lack of site specific groundwater information, the general groundwater flow direction cannot be determined at this time. Soils data from Natural Resources Conservation Service indicate deep soils in the vicinity of the facility. Average precipitation is 9-10 inches.
- Groundwater quality data within the area suggest median nitrate concentrations in the lower aquifer to be less than two parts per million. Groundwater quality data suggest median nitrate concentration in the upper aquifer to be greater than 10 parts per million. Because the upper aquifer demonstrates first encountered water and increase use from domestic and irrigation wells, this data was used to reach the suitability determination.
- The proposal is to expand an existing dairy operation from 350 animal units to 1140 animal units. The new facility will increase the number of animal units within a five-mile radius of the facility six percent.
- Primary land use in the area of the facility is irrigated agriculture. An estimated ratio of irrigated agriculture to animal units within a five-mile radius of the facility shows 2.9 acres of irrigated farm ground for every animal unit. The facility will land apply up to 2% of the nutrients produced on the facility. Ninety-eight percent of nutrients produced by the operation will be exported off site.

UNRECORDED

Idaho State Department of Agriculture • PO Box 790 • Boise, ID 83701
Technical Services • (208) 332-8665 • (208) 334-4062 (Fax)

AUG 16 2002

'TO SERVE, PROMOTE AND SAFEGUARD IDAHO'S DIVERSE AGRICULTURE COMMUNITY'

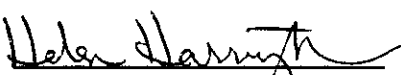
- The application for permit for a water right for this dairy is currently on hold until additional information is received. Most of the information needed is included in the CAFO Site Review and the Owyhee County approval process. The application for permit will be limited 1.0 cfs of water with the volume limitation to be determined when the water right is licensed. The application for permit only lists the two existing wells currently on site. Mr. Williams will need to file an amendment to add any additional wells or a transfer after the water right has been licensed.

Mitigation of risk through best management practices and available technology is being utilized on this facility to lower the suitability determination to **Low Risk**. The following best management practices contributed in determination of the rating.

- Waste transport on this facility is conducted primarily through dry scrape. Nutrients are found primarily in dried manure which is held in open lot corrals and land applied two times a year onto third party cropland.
- A storm water management plan is in the process of being implemented. Once this system is in place, the facility will have primary and secondary forms of containment. This will help eliminate discharges in extreme weather events.
- General cleanliness on the facility indicates that problems associated with pests and odors will be minimal.

We suggest that individual third parties that utilize nutrients produced by the facility are given the opportunity to develop nutrient management plans in accordance with the Idaho NRCS Nutrient Management Standard. If you require any further information regarding this proposal, please feel free to contact us.

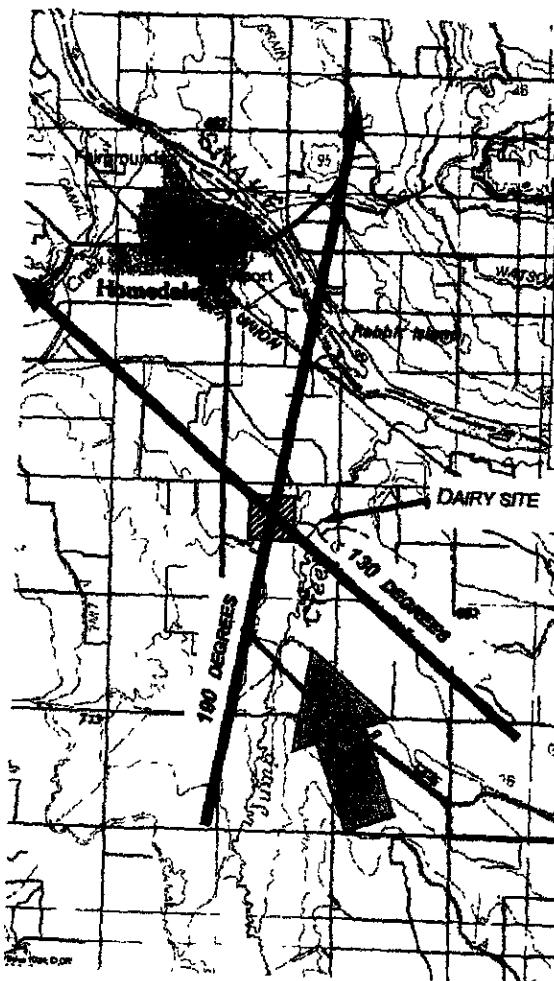

 Jennifer Beddoes, ISDA
 (208) 332-8665


 Helen Harrington, IDWR
 (208) 327-7950

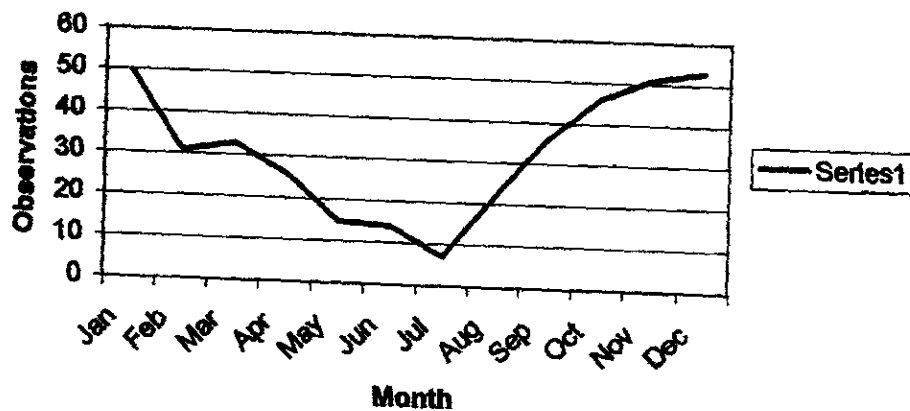

 Joe Baldwin, IDEQ
 (208) 373-0248

MICHAEL
 MAR 15 2004

WIND DIRECTION



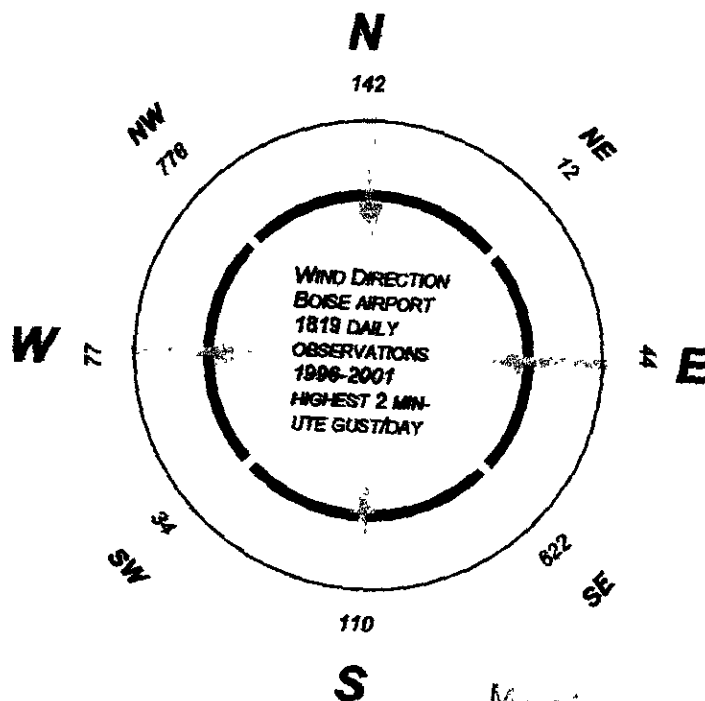
Observations of SE wind last 5 years



AT RISK ZONE= WIND FROM 130°-190° FROM TRUE NORTH, LESS THAN 20 MPH VELOCITY.

1819 OBSRVATIONS JAN 1996- JAN 2001:

398 OBSERVATIONS OR 28 % WERE FROM THE AT RISK ZONE



DIRECTION*	DAYS
N	142
NE	12
E	44
SE	622
S	110
SW	34
W	77
NW	778

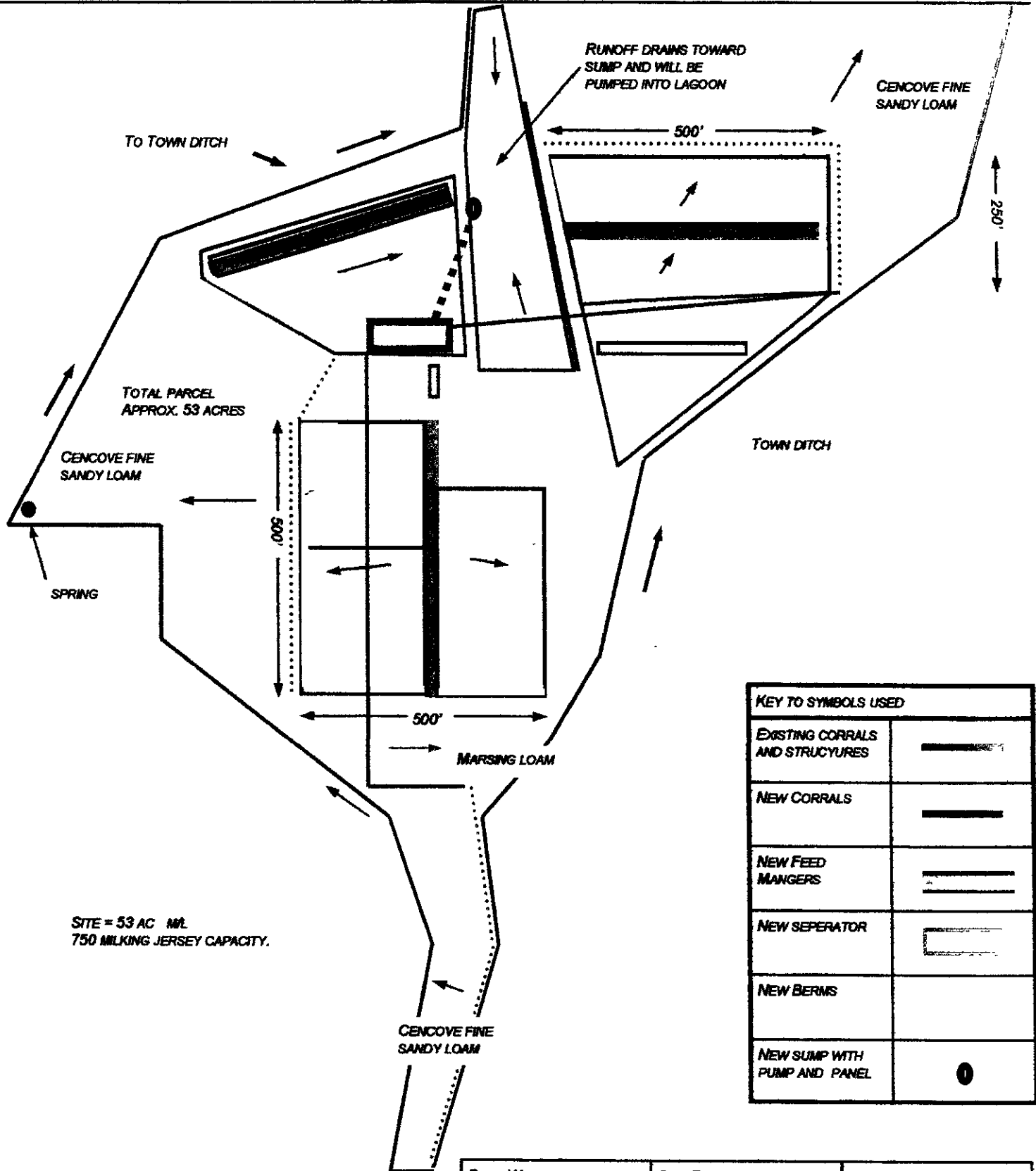
DAVE WILLIAMS	WIND DIRECTION
1103 MARKET STREET	PREPARED BY
HOMEDALE IDAHO 83828	DARWIN VANDER STELT

*DIRECTION FROM WHICH WIND BLEW

MAR 15 2004

MARK ROAD

APPROX 2032 10 INTERSECTION WITH JUMP CREEK ROAD



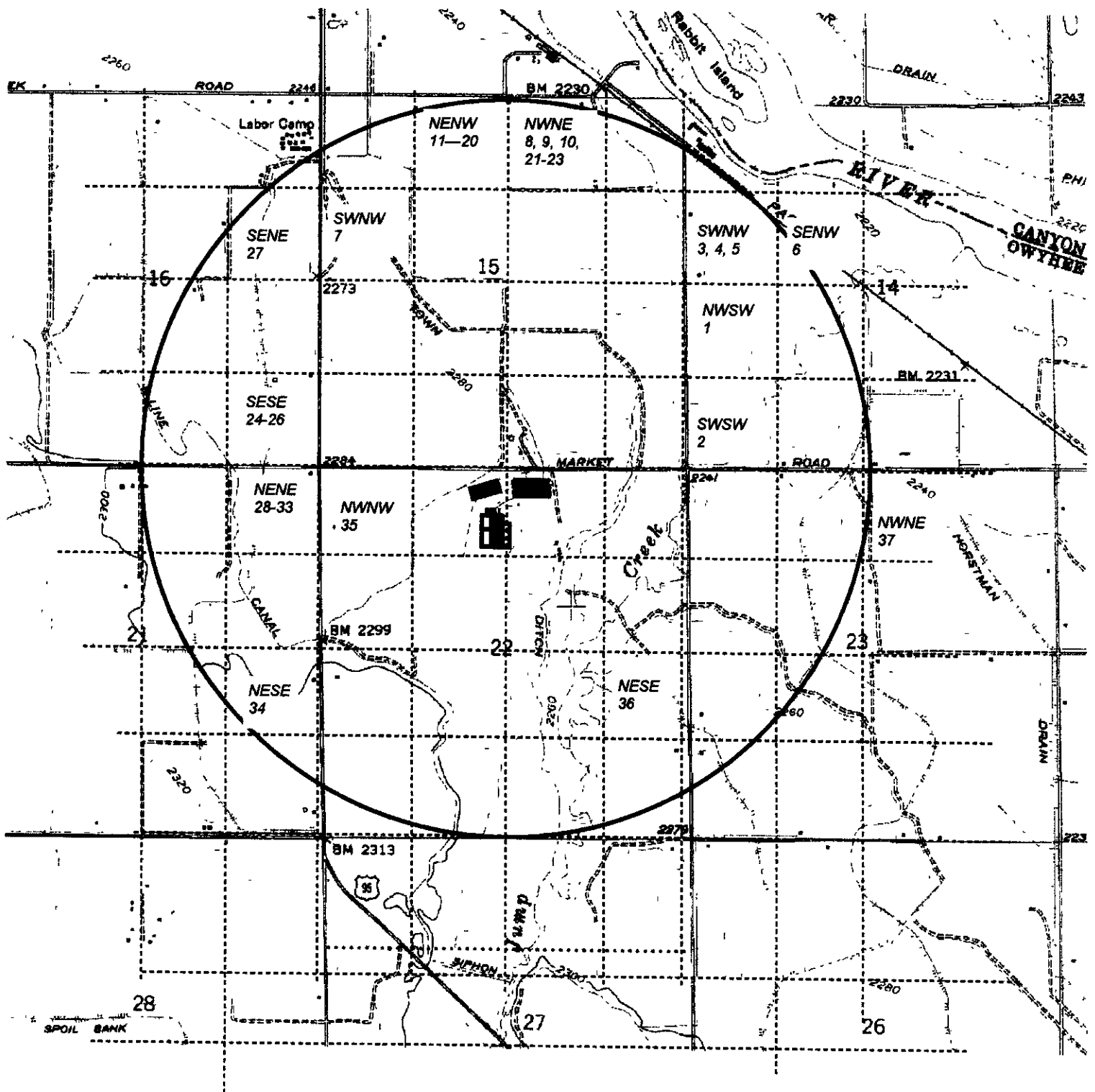
SITE = 53 AC. NWL
750 MILKING JERSEY CAPACITY.

KEY TO SYMBOLS USED	
EXISTING CORRALS AND STRUCTURES	
NEW CORRALS	
NEW FEED MANGERS	
NEW SEPERATOR	
NEW BERMS	
NEW SUMP WITH PUMP AND PANEL	



DAVE WILLIAMS	SITE PLAN	
1103 MARKET STREET	SCALE 1"= 250'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT

1/20/2004



DAVE WILLIAMS	WELLS WITHIN 1 MILE RADIUS	
1103 MARKET STREET	SCALE 1"= 2000'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT



MICRO
JUL 16 2000

Wells within one mile of Dairy site

Well No.	Contact	Use	TWP	RNG	SEC	Tract	Well Address	Gallons Per Minute	Static Water Level	Total Depth	Casing Depth	CSG. DIA.	Construction Date	Permit Number
1	LIGAS, PETE	Domestic- Single Residence	03N	05W	14	NWSW		15	28	270	39	6	8/1/91	720556
2	OROPEZA, ERNIE	Domestic	03N	05W	14	SWSW		0	12	205			2/23/80	774879
3	HICKMAN, HARRY, ALEXANDER, BILL	Domestic- Single Residence	03N	05W	14	SWNW		0	0	0				720444
4	AYALA, SERGIO	Domestic	03N	05W	14	SWNW		0	8	90			6/17/80	777119
5	PRIMERO, SHERRY	Domestic- Single Residence	03N	05W	14	SWSW NW	JUMP CREEK RD	10	10	150	39	6	5/13/95	720742
6	JACKSON, J C	Domestic- Single Residence	03N	05W	14	SENE		30	12	185	29	6	4/1/90	720506
7	QUINTANA, NIKKI, TIM	Domestic- Single Residence	03N	05W	15	SWNW	E OF HWY 95 (SOUTH OF HOMEDALE)	20	13	230	60	6	12/11/98	721038
8	EASON, ALICE, EASON, VANCE	Domestic- Single Residence	03N	05W	15	NWNE	1058 E PIONEER RD	15	24	116	39	6	5/4/94	720671
9	JOHNSON, JIM B	Municipal	03N	05W	15	NWNE	PIONEER RD	30	17	340	50	6	3/1/96	720804
10	CHRISTOFFERSEN, JEFF	Domestic- Single Residence	03N	05W	15	NWNE	SOUTH OF PIONEER RD- EAST OF HWY 95	15	40	135	50	6	4/3/98	720982
11	GARRETT, BRENDA	Domestic- Single Residence	03N	05W	15	NENW	PIONEER RD	0	30	160	38	6	12/8/94	720712
12	TRAMMEL, REX	Domestic- Single Residence	03N	05W	15	NENW	E OF HWY 95 ON PIONEER (1096A RT 1)	25	12	143	58	6	12/9/94	720713
13	THOMAS, JEFF	Domestic- Single Residence	03N	05W	15	NENW	PIONEER RD	10	26	147	49	6	12/19/94	720716
14	BARBER, CHERYL	Domestic- Single Residence	03N	05W	15	NENW	1 MI SOUTH HOMEDALE ON HWY 95, EASTON PIONEER	30	20	173	38	8	6/16/95	720746
15	MORRIS, BRIAN	Domestic- Single Residence	03N	05W	15	NENW	1/2 MILE EAST PIONEER RD AND HWY 95	1.5	21	260	38	6	5/31/95	720747
16	MORRIS, BRIAN	Domestic- Single Residence	03N	05W	15	NENW	1/2 MILE E OF HWY 95	1.5	31	434	38	6	6/6/95	720787

17	BABER, DARYL, BABER, CHERYLL	Domestic- Single Residence	03N	05W	15	NENW	SOUTH PIONEER RD & E OF HWY 95	0	0	0				720865
18	WEBB, JOHN	Domestic- Single Residence	03N	05W	15	NENW	SOUTH OFF E PIONEER RD	20	12	78	50	6	8/15/97	720933
19	BABCOCK, BARBARA, BABCOCK, LEROY	Domestic- Single Residence	03N	05W	15	NENW	1/4 MI S OF EAST MARKER & INDUSTRIAL	12	22	120	58	6	9/5/97	720938
20	BABER, CHERYLL	Domestic- Single Residence	03N	05W	15	NENW	PIONEER RD BETWEEN HWY 95 & INDUSTRIAL RD	30	17	375	50	6	10/8/97	720942
21	CRABB, TERRY	Domestic- Single Residence	03N	05W	15	NWNE		0	0	0				720568
22	JOHNSON, GLENDA, JOHNSON, JIM B	Domestic- Single Residence	03N	05W	15	NWNE	1059 E PIONEER RD	18	13	280	38	8	8/11/93	720634
23	JOHNSON, GLENDA, JOHNSON, JIM B	Municipal	03N	05W	15	NWNE	PIONEER RD	30	16	190	47	6	9/14/94	720643
24	RYSKA, TERESA I, RYSKA, JAMES S	Domestic- Single Residence	03N	05W	16	SESE	W MARKET RD	15	26	308	130	6	1/15/94	720655
25	URANGA JR, RUFUS	Domestic- Single Residence	03N	05W	16	SESE	WEST OFF HWY 95 SO OF HOMEDALE	15	16	345	282	6	3/24/99	721065
26	URANGA, RUFUS	Domestic- Single Residence	03N	05W	16	SESE								
27	BADIOLA, BEN, BADIOLA, LORI	Domestic- Single Residence	03N	05W	16	SENE	W OFF OF HWY 95	50	26	330	150	6	2/20/97	720883
28	WADE, LISA, WADE, KENNY	Domestic- Single Residence	03N	05W	21	NENE	MARKET ROAD & HWY 95	7	150	646	138	6	5/16/95	720743
29	PENFOLD, STEVE, PENFOLD, LOU	Domestic- Single Residence	03N	05W	21	NENE	CORNER MARKET & HWY 95 (RT 1, BOX 1079 B)	15	160	665	60	6	7/11/95	720754
30	PENFOLD, STEVE, PENFOLD, LOU	Domestic- Single Residence	03N	05W	21	NENE	MARKET & HWY 95	7	40	624	138	6	8/9/95	720760
31	BAHEM, SYLVIA, BAHEM, KEN	Domestic- Single Residence	03N	05W	21	NENE	W MARKET RD	8	14	265	80	6	12/1/95	720784
32	WADE, GORDON	Domestic- Single Residence	03N	05W	21	NENE	HWY 78	7	30	748	178	6	9/6/96	720839

33	KOELZER, RICHARD	Domestic- Single Residence	03N	05W	21	NENE	WEST PIONEER BETWEEN HWY 95 AND JOHNSTONE RD	8	30	340	140	6	6/23/99	721102
34	JESENKO, JOE	Domestic- Livestock	03N	05W	21	NESE	HWY 95 S OF HOMEDALE	5	80	580	49	6	2/6/93	720610
35	TROUT, GORDON	Domestic- Single Residence	03N	05W	22	NWNW	E MARKET ROAD	20	25	195	50	6	9/9/96	720796
36	SAWYER, TRACY, SAWYER, ROBERT	Domestic- Single Residence	03N	05W	22	NESE	3/4 MILE SOUTH OF MARKER RD ON JUMP CREEK ROAD	25	180	1180	-60	6	1/1/00	721142
37	ROSE, RONALD C	Domestic- Single Residence	03N	05W	23	NWNE	MARKET ROAD	75	30	267	267	6	5/22/97	720898

10/1/00

4/6/01 9 2004

USGS 433324117000901 03N 06W 36BAC1

Owyhee County, Idaho
 Latitude 43°33'24",
 Longitude 117°00'09" NAD27
 Gage datum 2,498.00 feet above sea level
 NGVD29
 The depth of the well is 330 feet below
 land surface.
 The depth of the hole is 330 feet below
 land surface.

Output formats
Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	Water level, feet below land surface	Status
1979-02-13		15.47	

USGS 433306116554001 03N 05W 34CBB1

Owyhee County, Idaho
 Latitude 43°33'06",
 Longitude 116°55'40" NAD27
 Gage datum 2,323.00 feet above sea level
 NGVD29
 The depth of the well is 95.0 feet below
 land surface.
 The depth of the hole is 95.0 feet below
 land surface.

Output formats
Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	Water level, feet below land surface	Status
1980-03-11		17.15	
1980-08-04		14.48	

USGS 432826116471001 02N 04W 26CCD1

Owyhee County, Idaho
 Latitude 43°28'26",
 Longitude 116°47'10" NAD27

Output formats
Table of data

1972-03-13		62.19		1980-09-24		81.88	R
1972-09-19		65.64		1981-03-17		75.62	R
1973-03-22		96.74	R	1981-09-28		99.62	
1973-10-02		86.50	R	1982-03-17		73.10	
1974-03-11		113.24	P	1982-07-22		95.92	
				1982-07-23			N

USGS 433335116504801 03N 04W 32BBA1

Owyhee County, Idaho

Latitude 43°33'35",

Longitude 116°50'48" NAD27

Gage datum 2,302.00 feet above sea level
NGVD29

The depth of the well is 250 feet below
land surface.

The depth of the hole is 250 feet below
land surface.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1979-02-15		36.65	
1980-03-11		36.95	

USGS 433403116522401 03N 05W 25ADC1

Owyhee County, Idaho

Latitude 43°34'03",

Longitude 116°52'24" NAD27

Gage datum 2,292.00 feet above sea level
NGVD29

The depth of the well is 386 feet below
land surface.

The depth of the hole is 386 feet below
land surface.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1979-02-15		32.27	
1980-03-11		37.39	

USGS 43341116581401 03N 05W 30ADA1

Owyhee County, Idaho

Latitude 43°34'11",

Longitude 116°58'14" NAD27

Gage datum 2,388.00 feet above sea level NGVD29

The depth of the well is 415 feet below land surface.

The depth of the hole is 415 feet below land surface.

4733 8867

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1979-02-13		34.15	R

USGS 433412116562001 03N 05W 28ACB1

Owyhee County, Idaho

Latitude 43°34'12",

Longitude 116°56'20" NAD27

Gage datum 2,330. feet above sea level NGVD29

The depth of the well is 30. feet below land surface.

The depth of the hole is 30. feet below land surface.

8967

13133

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
------	------	--------------------------------------	--------

1000

4733 8867

1975-07-18		16.	
1998-08-13		20.25	

USGS 433429116583601 03N 05W 19DCD1

Owyhee County, Idaho

Latitude 43°34'29",

Longitude 116°58'36" NAD27

Gage datum 2,378.00 feet above sea level
NGVD29

The depth of the well is 325 feet below
land surface.

The depth of the hole is 325 feet below
land surface.

N 19650 E 3160

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water	ml	Date	Time	Water	ml
1967-01-13		54.30	R	1973-05-18		47.17	
1967-04-28		58.42	R	1973-07-09		68.83	R
1967-07-06		59.99	R	1973-10-02		56.68	
1967-08-01		65.13	R	1973-12-04		58.25	
1967-09-17		63.55	R	1974-02-01		62.04	
1967-11-28		70.55	R	1974-03-11		61.60	
1968-01-24		70.97	R	1974-04-26		68.45	
1968-03-25		63.54	R	1974-06-11		72.07	
1968-05-30		60.62	R	1974-07-10		65.14	R
1968-07-26		73.70	R	1974-09-21		44.94	
1968-09-13		84.96	R	1974-11-13		43.23	
1968-12-04		58.63	R	1974-12-26		66.54	R
1969-04-14		64.45	P	1975-01-17		66.54	R
1969-07-15		62.18		1975-03-21		63.45	P
1969-09-17		46.88		1975-05-09		77.45	P
1969-11-12		51.72		1975-06-18		77.93	R
1970-01-14		54.16		1975-07-23		89.27	R
1970-03-09		40.71		1975-10-25		73.49	R
1970-05-13		39.79	R	1975-11-29		70.92	R
1970-07-15		35.13		1976-01-17		68.24	P

1970-07-15		35.13		1976-01-17		68.24	P
1970-09-16		34.90		1976-02-16		66.96	R
1970-11-25		36.40	R	1976-03-18		72.76	R
1971-01-13		36.74		1976-05-08		87.45	R
1971-03-17		39.15	P	1976-06-08		78.68	R
1971-05-12		41.76		1976-09-20		83.66	
1971-07-13		39.77		1977-03-15		76.18	R
1971-09-28		37.63		1977-05-19		86.57	R
1971-12-06		41.63		1977-07-13		92.02	R
1972-01-14		37.13		1977-09-16		90.12	R
1972-03-13		38.42		1977-11-30		89.79	R
1972-05-15		44.39		1978-01-18		79.71	R
1972-07-14		34.75		1978-03-22		84.85	R
1972-09-19		33.23		1978-05-23		84.33	R
1972-11-15		33.62		1978-07-20		96.38	R
1973-03-22		35.43		1978-07-21			N
				1979-02-13		74.39	R
				1980-03-11		86.72	R

USGS 433608116585801 03N 05W 18BAB1

Owyhee County, Idaho

Latitude 43°36'08",

Longitude 116°58'58" NAD27

Gage datum 2,285.00 feet above sea level
NGVD29

The depth of the well is 270 feet below
land surface.

The depth of the hole is 270 feet below
land surface.

E 1700 N 20683

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1980-03-11		64.75	R
1980-08-04		64.66	R

SEP 15 2004

USGS 433632116550501 03N 05W 10DBB1

N 23208 E 18100

Owyhee County, Idaho

Latitude 43°36'32",

Longitude 116°55'05" NAD27

✓ Gage datum 2,225. feet above sea level
NGVD29

The depth of the well is 600. feet below
land surface.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1997-06-		14.	

USGS 433722116560501 03N 05W 04DAC1

Owyhee County, Idaho

Latitude 43°37'22",

Longitude 116°56'05" NAD27

Gage datum 2,230.00 feet above sea level
NGVD29

The depth of the well is 750 feet below
land surface.

The depth of the hole is 750 feet below
land surface.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	Water level, feet below land surface	Status
1958-09-01		20.00	

USGS 433727116580801 03N 05W 05CBB1

E 5175 N 28733

Owyhee County, Idaho

Latitude 43°37'27",

Longitude 116°58'08" NAD27

✓ Gage datum 2,350.00 feet above sea level
NGVD29

The depth of the well is 250 feet below
land surface.

The depth of the hole is 250 feet below

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

land surface.

Date	Time	Water level, feet below land surface	Status
1979-02-09		16.25	
1980-03-11		15.75	
1980-08-04		11.43	

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Sergio Ayala
Address P.O. Box 834 Home Dale Idaho
Owner's Permit No. _____

7. WATER LEVEL

Static water level 8 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

8. WELL TEST DATA

☐ Pump ☒ Bailor ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pump
30	35'	3

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

9. LITHOLOGIC LOG

103161

Hole Diam.	Depth		Material	V
	From	To		
6"	0'	6'	Top Soil	
6"	6'	12'	Hard Pan	
6"	12'	23'	Gravel	
6"	23'	40'	Blue Clay	

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
1250 inches	6.625 inches	1 feet	39 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ NoWas a packer or seal used? ☐ Yes ☒ NoPerforated? ☐ Yes ☒ NoHow perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth 20 Material used in seal: ☐ Cement grout☐ Puddling clay ☒ Well cuttingsSealing procedure used: ☐ Slurry pit ☒ Temp. surface casing☐ Overbore to seal depthMethod of joining casing: ☐ Threaded ☐ Welded ☐ Solvent

Weld

RECEIVED
JUL 11 1980Department of Water Resources
Western Regional OfficeRECEIVED
JUL 15 1980

Office Use Only
 Inspected by _____
 Twp _____ Rge _____ Sec _____
 _____ 1/4 _____ 1/4 _____ 1/4
 Lat : : Long: : :

94458

1. WELL TAG NO. D 000 2908
 DRILLING PERMIT NO. 57-98-W-1087-000
 Other IDWR No. _____

2. OWNER:

Name TIM ANDROR NIKKI OVINTANA
Address RT-1 Box 1100
City HOMEALC State ID Zip 83625

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
 W E S
 Twp. 3 North ☒ or South ☐
 Rge. 5 East ☐ or West ☒
 Sec. 15 1/4 SW 1/4 NW 1/4
 Gov't Lot _____
 County Owyhee
 Lat: _____ Long: _____
 Address of Well Site EAST OF
HWY 9.5 S. of City Homedale
 (Give full name of road - Distance to Road or Landmark)
 Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

8. DRILL METHOD

☐ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pegs	
BENTONITE	0	18	6	GROUT

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☒ Y ☐ N How? OKED

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+1	60	150	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe_____ Length of Tailpipe_____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

13 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices:

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
20	50	120	4 hr.

Water Temp. 62° Bottom hole temp.
Water Quality test or comments: 176RNS.

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Keweenaw Metcalf Firm No. 93

Firm Official Kenneth M. [Signature] Date 7-2-19-98

and
Driver or Operator Richard M. [Signature] Date 12-19-98
(Sign once if First Officer & Operator)

(Sign once if First Officer's Computer)

FORWARD WHITE COPY TO WATER RESOURCES

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

_____ 1/4 _____ 1/4 _____ 1/4

Lat: : : Long: : :

☒ Air ☐ Flowing ☐ Artesian

Driller or Operator Kenneth Date 12-6-00

(Sign once if Firm Official & Operator)

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by _____			
Twp _____	Age _____	Sec _____	
1/4 _____	1/4 _____	1/4 _____	
Lat: _____	Long: _____	_____	

1. WELL TAG NO. D 000 9066
DRILLING PERMIT NO. 57-19-W-0020-100
Other IDWR No. _____

2. OWNER:

Name RUFUS URANGA JR.
Address P.O. BOX 203 RT. 1
City HONOLALE State HI Zip 96822

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N W E S		Twp. <u>3</u>	North ☒ or South ☐
		Rge. <u>5</u>	East ☐ or West ☒
		Sec. <u>16</u>	1/4 <u>SE</u> 1/4 <u>SE</u> 1/4
		Gov't Lot _____	County <u>OWYHEE</u>
Lat: _____ Long: _____		Address of Well Site <u>WEST OFF OF HWY OFF HWY 95</u> City <u>HONOLALE</u>	

(Give at least name of road or landmark)

Lt. _____ Blk. _____ Sub. _____ Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☐ New Well ☒ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
BENTONITE				DRY

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____Was drive shoe seal tested? ☒ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	95	282	50	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations

Method

Screens

Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

10 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☐ Pump ☒ Baller ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
15	10	60	2 HRS

Water Temp. 62° Bottom hole temp. _____Water Quality test or comments: 21 GRNS

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Ws

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
6	195	240	BLUE CLAY	
	240	250	BROKEN BLUE CLAY	
			32 GRNS	
	250	276	BLUE CLAY	
	276	280	BROKEN BLUE CLAY	
			25 GRNS	
	280	310	BLUE CLAY	
	310	325	BROKEN BLUE CLAY	
			21 GRNS	
	325	345	BLUE CLAY	

RECEIVED

JUN 04 1999

WATER RESOURCES
WESTERN REGIONCompleted Depth 345 (Measurable)Date: Started 3-18-99 Completed 3-24-99

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

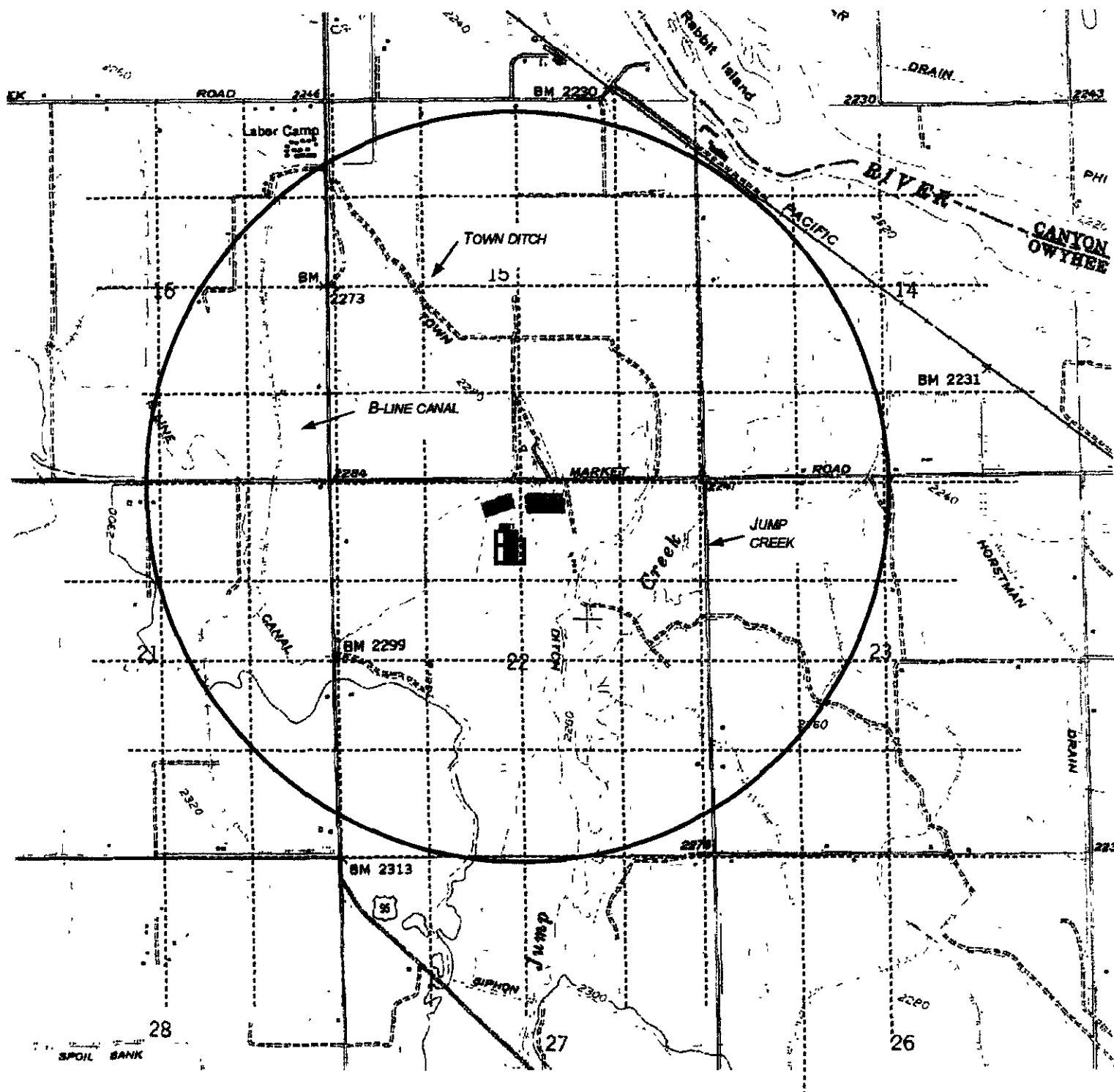
Company Name KENNY HETZLER DRILLING No. 93Firm Official Kenny Hetzler Date 4-21-99and Driller or Operator Kenny Hetzler Date 4-21-99

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

[illegible]



DAVE WILLIAMS	MAP OF WATERWAYS	
1103 MARKET STREET	SCALE 1"= 2000'	
HOMEDALE IDAHO 83628		PREPARED BY
		DARWIN VANDER STELT



Nelson, Dan

From: Nelson, Dan
Sent: Monday, March 11, 2002 9:42 AM
To: 'Darwin Vander Stelt'
Subject: RE: Dave Williams Application

To: Darwin Vanderstelt

From: Dan Nelson

I have recieved your request for an extension of time for the Dave Willams water right and will grant the 60-day extension that you requested. This means that your will need to submit the needed information by 5/13/2002. If I don't recieve the information at that time will contact you for the information. You may deliver this information at any time before the 5/13/2002 deadline and processing will resume.

Daniel A. Nelson
Senior Agent
Western Region
Idaho Department of Water Resources

-----Original Message-----

From: Darwin Vander Stelt [mailto:dvs2@mindspring.com]
Sent: Friday, March 08, 2002 12:52 PM
To: dnelson@idwr.state.id.us
Subject: Dave Williams Application

To: Dan Nelson, IDWR

From Darwin Vander Stelt

Dave Williams has recently submitted an application to Owyhee county for a conditional use permit for his proposed expansion. Please extend the time limit on his water application as he needs to complete the permitting process in order to demonstrate that this project is in the public interest. Sixty days should be sufficient. Thank You!

Darwin Vander Stelt

MICROFILMED

MAR 15 2001



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

FAX (208) 334-2348

May 14, 2002

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

DAVE WILLIAMS
1103 MARKET STREET
HOMEDALE ID 83628

COPY

RE: APPLICATION FOR PERMIT 57-11585

Dear Mr. Williams:

On 7/30/2001 I requested additional information for application for permit 57-11585 for a dairy in Owyhee County (copy of letter enclosed). On 9/7/2001, your consultant sent a request for an extension of time to supply the information requested on 7/30/2001. The extension of time has expired and it is now time to supply the needed information.

Please submit the needed information. In order to process all of the applications in our office as efficiently as possible, I am required by Idaho Code § 42-204 to ask that this information be returned to my office within 30 days. Our office will be required to void the application for transfer if this information is not returned. **Therefore, if the above information is not received by 6/14/2002 your applications for permit will be voided.** You will be able to re-file this application at a latter date when all the needed information has been compiled.

If you have any questions or concerns please contact Dan Nelson at the above address.

Respectfully,

Daniel A. Nelson
Sr. Water Right Agent

Cc Darwin Vanderstelt

MAR 15 2002



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

FAX (208) 334-2348

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

April 18, 2002

Fax to: Owyhee County
Planning & Zoning (P & Z)

Fax: 208-495-2051

Re: Conditional Use Permit
David Williams Dairy Expansion

To Whom It May Concern:

The following letter is in response to the Commission's request for comments from Idaho Department of Water Resources (IDWR) in regards to David William's proposed Dairy Expansion.

Currently, Mr. Williams has ground water right for domestic and stockwater use, limited to 13,000 gallons per day. IDWR received an application for permit from Mr. Williams 3/15/2001 to cover a proposed expansion to his operation resulting in 650 milking cows, 100 dry cows and 750 replacement heifers within the next five years. The ground water will be supplied by two existing wells. The application has been advertised without protest and is currently on hold, pending the results from P & Z.

Thank you for the opportunity to comment. Please contact me at this office if you have any further questions.

Sincerely,

Lori Graves
Sr. Water Resource Agent

Micro

MAP 4 5 6 7

Nutrient Management Service
16931 Star Rd.
Nampa, ID 83687
(208) 465-9496 office (208) 465-9497 fax

facsimile transmittal**To:** Dan Nelson**Fax:** 334-2348**From:** Darwin Vander Stelt**Date:** 6/14/02**Re:** Dave Williams Application**Pages:** 1**CC:** [Click here and type name]☐ Urgent☐ For Review☐ Please Comment☐ Please Reply☐ Please Recycle

Please extend the time for considering the Application for License submitted for Dave Williams. The dairy expansion and this application is contingent upon a review by the county site committee which has not yet been completed. Thank You!

Darwin Vander Stelt

MAY 15 2004



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

FAX (208) 334-2348

September 7, 2001

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

DAVE WILLIAMS
C/O DARWIN VANDERSTELT
16931 STAR ROAD
NAMPA ID 83687

**RE: REQUEST FOR ADDITIONAL TIME TO SUPPLY
ADDITIONAL INFORMATION FOR PERMIT 57-11585**

Dear Mr. Williams and Mr. Vanderstelt:

I received your request for a two-month extension of time to supply the additional information required in my letter dated 7/30/2001. We will grant an additional six-months for you to supply the needed information. Please supply the information by March 8, 2001. This extra time should ensure that you would have enough time to get the information into our office. You may submit the information anytime before the deadline.

If you have any questions or concerns please contact Dan Nelson at the above address.

Respectfully,

Daniel A. Nelson
Sr. Water Right Agent

MAILED

SEP 15 2001

Nelson, Dan

From: Darwin Vander Stelt [dvs2@mindspring.com]
Sent: Friday, September 07, 2001 6:48 AM
To: Nelson, Dan
Subject: RE: Dave Williams application for permit

While responding to your request for more information, Dave Williams has discovered that it may be necessary for him to apply for a Conditional Use Permit in Owyhee County in order to provide you with their written concurrence. Since this may require a hearing, Dave hereby requests 2 months of additional time for processing this water application. Thank You!

Darwin Vander Stelt

WV:mc

SEP 11 2001



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

FAX (208) 334-2348

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

July 30, 2001

DAVE WILLIAMS
C/O DARWIN VANDERSTELT
16931 STAR ROAD
NAMPA IDAHO 83687

COPY

RE: DAVE WILLIAMS APPLICATION FOR PERMIT 57-11585

Dear Darwin:

Dave Williams's application for permit 57-11585 was submitted for advertising in the Owyhee Avalanche on 5/2/01 and 5/9/01. No protests were received for this application.

When reviewing applications, our office is required by Idaho Code § 42-203A – section 5 to consider the following information whether the application is protested or not:

(a) That it will reduce the quantity of water under existing water rights, or (b) that the water supply itself is insufficient for the purpose for which it is sought to be appropriated, or (c) where it appears to the satisfaction of the director that such application is not made in good faith, is made for delay or speculative purposes, or (d) that the applicant has not sufficient financial resources with which to complete the work involved therein, or (e) that it will conflict with the local public interest, where the local public interest is defined as the affairs of the people in the area directly affected by the proposed use, or (f) that it is contrary to conservation of water resources within the state of Idaho

- 1.) Please locate on a USGS quad map all wells not owned by the applicant within a one-half mile radius of the points of diversion listed on the application and evaluate the effect diversion of ground water for the dairy will have on these neighboring wells.
- 2.) In regards to local public interest, please explain in detail the current process for approval of the dairy by local governments responsible for granting permission for the dairy. If a local jurisdiction is not required to approve the proposed dairy, please obtain a comment letter about the project from the Gem County Commissioners or from a person designated by the commissioners to act on their behalf.

Please demonstrate that local residents have been notified of your proposal and have been afforded a meaningful opportunity to review the proposal.

8/1/01

8/1/01

Page 2
Williams

The information supplied in the nutrient management plan does supply sufficient information concerning water quality, conservation of water resources and delay or speculative purposes, but the above information is needed for sufficiency of water supply and the local public interest. Please supply the above information within 30 days of this letter to allow us to process this application as soon as possible.

Please contact me if you have any questions.

Respectfully,


Daniel A. Nelson
Sr. Water Right Agent

Cc: Dave Williams

10.1.1

MAR 26 2007

The Owyhee Avalanche

P.O. BOX 97 • HOMEDALE, ID 83628 • 208/337-4681

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO)
) SS
COUNTY OF OWYHEE)

I, Joe E. Aman, being first duly sworn, depose and say:

1. That I am a citizen of the United States of America, and at all times hereinafter mentioned was and now over the age of twenty-one years, not a party to nor interested in the proceedings hereinafter mentioned.

2. That during the time of the publication of the notice hereinafter mentioned, I was and now am the publisher of The Owyhee Avalanche, a newspaper of general circulation printed and published weekly, on Wednesday of each and every week, in the City of Homedale, County of Owyhee and State of Idaho.

3. That the said The Owyhee Avalanche has been printed and published continuously and uninterruptedly in said County during a period of more than seventy-eight weeks prior to the first publication of the attached notice.

4. That said notice of which a printed copy, taken from said newspaper, is hereto affixed, was published in the regular issue thereof, and not a supplement thereto, in

said newspaper, in TWO (2)
(consecutive) calendar weekly issue(s) of said newspaper, in the following date(s):

May 2 & 9, 2001

SIGNED: _____

STATE OF IDAHO)
COUNTY OF)

On this 30th day of May in the year of 2001 before me, a

Notary Public, personally appeared JOE E. AMAN
known or identified to me to be the person whose name subscribed to the within instrument,
and being by me duly sworn, declared that the statements therein are true, and acknowledged
to me that he executed the same.

Shirley McWhorter
Notary Public for Idaho

Residing at Homedale, Idaho

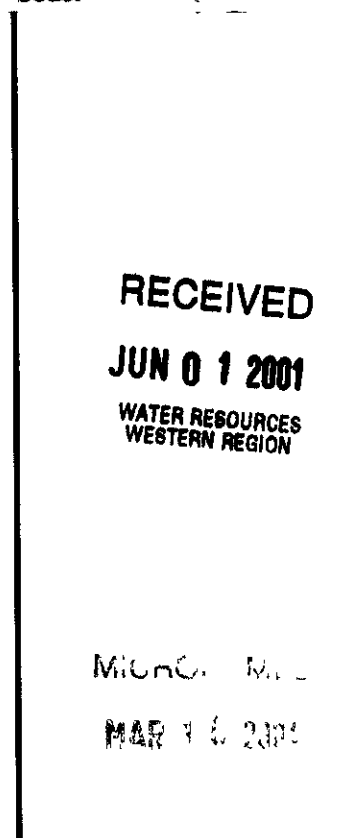
My commission expires: 10/10/06



Any protest against the
issuance of this application
shall be filed with the
Director, Dept. of Water
Resources, Western Region,
1000 N. 1st St., Boise, ID
83724-1000, together with a protest
fee of \$25.00 for each
application as set forth in
the rules of the department.
The protest fee shall be
refunded if the protest is
withdrawn within 10 days of
the protest fee being paid.

MARK J. DREHNER,
Director

Use: STOCK WATER 01/01
TO 12/31 0.71 CPS IN AFA
Use: COMMERCIAL 01/01
TO 12/31 1 CPS IN AFA
Use: DOMESTIC 01/01 TO
12/31 0.04 CPS IN AFA
Total Diversion: 1 CPS IN
AFA
Date Filled: 05/19/2001
Place of Use:
TOON ROAD AND NEAR
SHARPS FARM
Place of Use:
COMMERCIAL 211 37-3
TOON ROAD AND NEAR
SHARPS FARM
TOON ROAD AND NEAR
SHARPS FARM
multiple permits may be
issued in the future as needed.
Permits will be subject to all
prior water rights and may be
subject to change.
Code:





State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

FAX (208) 334-2348

April 30, 2001

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

COCO
C/O ILENE DOBBINS
RT 1 BOX 392
MARSING ID 83639

Re: Application for Water Right No. 57-11585 in the Name of Dave Williams.

Dear Sir and/or Madam:

Enclosed are copies of the above-referenced applications for permit which may be of interest to you. Please review the applications and submit any comments you may have.

This office normally completes the processing of an application within a six-week period and is required to take final action shortly thereafter. However, if you desire to file a formal protest against the approval of this application(s), your written protest along with the \$25.00 protest fee must be received in this office by May 21, 2001.

If you have any questions regarding the application, please contact this office.

Sincerely,

A handwritten signature in cursive script that reads "Gary Spackman".

Gary Spackman

GS:lm

Encl: Copy of Application

MAR 16 2001



IDAHO STATE DEPARTMENT OF AGRICULTURE



TECHNICAL SERVICES

12/15/00

Owyhee Dairy
David Williams
Box 1103 Market Road
Homedale, Idaho 83628

Dear David Williams:

The Nutrient Management Plan for Owyhee Dairy written by Steve Thomas, Planner was approved by Jenifer Beddoes on 12/11/00.

If you have any questions or concerns please contact Kellie Gray at (208) 332-8665 or (208) 850-9753.

Sincerely,

Kellie Gray

Kellie Gray
Nutrient Management Coordinator

cc: Marv Patten, Chief, Bureau of Dairying
Jenifer Beddoes, Resource Engineer
Alan Giacomini, Dairy Inspector
Steve Thomas, Planner

Idaho State Department of Agriculture • PO Box 790 • Boise, ID 83701
Technical Services • (208) 332-8665 • (Fax) (208) 334-4062

'To Serve, Promote And Safeguard Idaho's Diverse Agriculture Community'

MICROFILMED

MAR 15 2004

Nutrient Management Plan
for
Owyhee Dairy

October 18, 2000



Prepared for:

David Williams
T3N R5W Sec. 22
Homedale, ID 83628
(208) 337 - 4226

Planner
Steve Thomas
1238 Desert Glen Rd Adrian, OR 97901
Phone. 541-339-3602 Cell 208-337-8164

MICRO, INC.
MAR 16 2004

Facility Information Sheet

Facility	Owyhee Dairy		
Operator Information	David Williams Box 1103 Market Rd Homedale, ID 83628	Home Phone Cell Phone Barn Phone	208-337-4226
County	Owyhee	Comments:	
Soil Conservation District	Owyhee		
Watershed Basin	Middle Snake-Succor		
Hydrologic Unit Code #	17050103		
Stream Segment	Jump Creek		
GPS	N 43°35.251'	W 116°55.011'	

	Nitrogen (pounds)	Phosphorus (pounds)	Potassium (pounds)
Nutrients Exported:	19166 (100%)	8170 (100%)	33646(100%)
Animal Nutrients	0	0	0
Commercial Nutrients	0	0	0

Limiting Resource	Groundwater	Vulnerability	Low
Plan Designed To	Phosphorus	Average Crop Uptake	
AU applied off the Facility	365		
Total Acres Available for Nutrients Owned by the Facility	0		
Animal Equivalent Units per Acre	0		

Action Required:	Compliance Date	Completion Date
Containment Upgrade Required		
Irrigation Mechanical Upgrade Required		
Irrigation Management Upgrade Required		
Water Quality Related Practice Required		

Signature of Certified Planner: _____

Steve Thomas, Certification Number 233

Date: 11/14/2000

Signature of Operator _____

David Williams

Date: 11/14/2000

MICROFILM

MAR 15 2004

Producer Summary

Facility Summary

Owyhee Dairy is an existing facility located at 1103 Market Rd Homedale, ID. The dairy is milking 50 Holstein cows 200 Jersey cows with approximately 30 dry cows. Milking cows and dry cows are housed in open lots. Heifers and calves are raised at the facility consisting of 100 heifers housed in open lots and 100 calves housed in barns, calf hutches and open lots. Wastewater from the barn is used to flush the solids to the lagoon system. Holding pen is scraped into corral and stockpiled. The facility does not own or rent any farm ground so 100% of waste is exported.

Resource Concerns

Dairy is located in the Middle Snake-Succor hydrologic unit, HUC # 17050103 along the Jump Creek stream segment. This stream segment is water quality limited for habitat alteration. The facility is located at N 43°35.251' and W 116°55.011' using GPS coordinates.

Nutrient Management Plan Requirements

- Liquid waste will be applied to adjacent farm ground to dairy. Lagoon waste will be land applied when required by pumping liquid waste through mainline to hand lines for uniform application of field. Liquid waste application should be between March 15th and November 15th when required.
- One hundred percent of the waste will be exported off the facility. The producer will keep load tickets to verify movement of solids off of the facility.

Storage and Handling Plan Recommendations

- Continual inspection and maintenance of waste handling facilities and equipment will prevent unwarranted waste discharges into surface water and groundwater.
- Contain manure storage areas to prevent run-off and direct seepage to groundwater from occurring.
- In the event of a 25 year, 24 hour storm and a 1 in 5 year winter a berm may need to be added to the North and West End of the corrals on the West Side of gravel lane. On the East Side of the gravel lane a berm may need to be added to the South and East End of corrals

MICRO, Inc.

MAR 15 2004

Analysis of Nutrient Management Practices

Facility Description

Owyhee Dairy is an existing facility located at 1103 Market Rd Homedale, ID 83628. This facility is owned and operated by David and Sue Williams.

The purpose of this nutrient management plan is to inform livestock producers and others of the value of animal waste and certify that nutrients are utilized in an appropriate way which will not adversely impact surface or groundwater if properly managed.

Currently Owyhee Dairy is milking 200 Jersey cows and 50 Holstein cows. However, the dairy gradually expanded over the past three years. This nutrient management plan was developed for 200 milking Jerseys and 50 milking Holsteins and 30 dry cows. Calves and heifer are raising on the facility. The milking parlor has been recently enlarged to a double 14-stall barn. Milk will be loaded every other day into a tanker truck for transportation to the milk plant. Cows are milked two times a day. Essentially 5% of the manure produced by the milking herd are flushed to the lagoon system. The facility exports 100% of the waste produced.

Owyhee Dairy does not own or lease cropland for waste application.

Resource Concerns

Owyhee Dairy is located in the 17050103 hydrologic unit in the Middle Snake-Succor watershed basin by the Jump Creek stream segment. The facility is found at 43°35.251' N and 116°55.011' W using GPS Coordinates.

The most immediate resource concern on Owyhee Dairy is to groundwater quality. The major environmental concern to groundwater on this facility is from nitrogen leaching. Although nitrogen and phosphorus are the nutrients of immediate concern, repeated land applications of animal waste will elevate potassium and salt concentrations, which may create a nutrient imbalance. This nutrient imbalance will likely adversely impact agricultural sustainability once a critical level is reached.

The natural slope of 0.3%-0.6% to the North of the facility is utilized to contain run off from the dairy. Earthen lagoon is located northwest of the milking parlor therefor does not catch facility runoff. If a discharge were to occur, contaminated run off would enter irrigation ditches and eventually discharge into Jump Creek going to the Snake River. The dairy is located on a small hill, a ravine runs to the North and West end of the facility, therefore run on of clear water might be a problem if a 25 year, 24 hour storm or a 1 in 5 year winter event were to occur.

MIC-11

APR 15 2004

Waste Storage and Handling

Milking and dry cows are housed in open lots. Open lots and calf barns are bedded with straw. Producer estimated that the facility uses 100 tons of straw each year. Every ton of straw will bind up 15 to 20 lbs of nitrogen while the straw is being broken down. After this phase, the nitrogen will be slowly released as mineralization occurs. Nutrient calculations for the nutrient management plan do not take a nitrogen deficit for straw breakdown. Solid waste from the holding pen is scraped daily or every other day into a manure storage area north of the milking parlor. This waste will be called scraped manure throughout the remainder of the nutrient management plan. Solid waste deposited in open lot housing is stored and cleaned out two times a year. This waste will be called solid pack manure throughout the remainder of the nutrient management plan. Solid pack manure is stockpiled on the facility and the majority is land applied in the fall before the fields are plowed under. Scraped manure is stockpiled in the corral north of the milking parlor or behind holding pen and land applied periodically in the spring and fall. When fields are in cropland production the scraped manure is stockpiled on the facility and land applied with the solid pack manure.

Solid pack deposited in housing and along the feed alley is stockpiled in the corrals and cleaned out twice a year. It is estimated that 100 tons of straw is used yearly for bedding purposes. Manure is transported from the corrals in a manure spreader and applied to third party cropland within a five-mile radius of the facility. Waste agreements and a list of third party land application sites is found in Appendix B. It is estimated that 5% of the solid waste from the milking herd is deposited in the milking parlor and flushed to the lagoon.

Wastewater from the barn is transported to the lagoon through an 8" PVC pipe by gravity into the lagoon. The lagoon is 220' X 72' X 13' deep, holding 124,800 ft³. Liquid waste is pumped from the lagoon, through main line to the field and applied through hand lines to cropland adjacent to facility.

Steve Thomas, nutrient management planner determined 180-day storage for liquid wastes for Owyhee Dairy. The sizing is found in Appendix B. Barn waste generated for 250 milking cows is 58,053 ft³. Runoff from the facility would encompass 14,638 ft³ for a 25 year, 24 hour storm and the 1 in 5 year winter. The facility is appropriately sized to contain 180-days liquid storage and runoff.

Facility Site Plans (See Following page)

Mr. . . .

MP : 2 2006

DAVID WILLIAMS

Date- 10-17-2000

DESCRIPTION	NUMBER	WEIGHT LBS	CONFINEMENT			DAYS GRAZED	DAYS STORAGE	
			START	END	DAYS		LIQUIDS	SOLIDS
MILKER	250	1000	JAN	DEC	365	0	180	180
MILKER (DRY)	30	1000	JAN	DEC	365	0	180	180
HEIFERS	100	615	JAN	DEC	365	0	180	180
CALVES	100	230	JAN	DEC	365	0	180	180

DESCRIPTION	1000 LB ANIMAL UNITS(AU)	CF/D/AU MANURE	LB/DAY/AU		
			N	P	K
MILKER	250.00	1.37	0.37	0.07	0.20
MILKER (DRY)	30.00	1.30	0.36	0.05	0.23
HEIFERS	61.50	1.30	0.31	0.04	0.24
CALVES	23.00	1.30	0.31	0.04	0.24
TOTALS>>>>>>>>>>>>>>>>	364.50	1.35	0.36	0.06	0.21

REF: IAWMG page 63

Does feed seepage enter liquid storage facility (Y/N)-? NO

Table 1 shows the total amount of nutrients produced on the facility.

Table 1. Nutrients Produced

Description	Volume ft ³	N	P lbs	K
Lagoon Waste		970	319	1186
Solid Waste	176018	18196	7851	32460
Total Nutrients Produced		19166	8170	33646
<i>Nutrients Exported</i>		<i>19166</i>	<i>8170</i>	<i>33646</i>
Total Nutrients for Land Application		0	0	0

See Appendix A

Raw data used to calculate the information illustrated in Table 1 is found in Appendix A. As shown in Table 1, 71% of the nitrogen, phosphorus and potassium are exported off of the facility in solids.

Liquid waste will be applied to adjacent farm ground due to its close proximity to the lagoon. Lagoon waste will be pumped through mainline then through hand lines for uniform application on field.

Continual inspection and maintenance of waste handling facilities and equipment will prevent unwarranted waste discharges into surface water and groundwater.

Contain manure storage areas to prevent run-off and direct seepage to groundwater from occurring

Table 6 shows the total acres that should be utilized to land apply the liquid and solid waste from 365 AU onto an average cropland rotation of silage/alfalfa/wheat.

Table 6. Acres Needed for Land Application

Uptake	Crop Rotation	Pasture
Liquids	8	.0
Solids	192	0

Appendixes

Appendix A-	Raw Calculations for Nutrient Balance
Appendix B-	Third Party Waste Agreements
Appendix C-	Sizing Output for 180 Liquid Storage
Appendix D-	Crop Rotation Balance
Appendix E-	Nutrient Budget Worksheets
Appendix F-	Irrigation Calculations
Appendix G-	Soil Information

Appendix A

Animal Nutrients

Animals		AU	N	P	K	N	P	K
MILKERS	250	250	.45	.07	.26	41063	6388	23725
Dry's	30	30	.36	.05	.23	3942	548	2519
HEIFERS	100	61.5	.31	.04	.24	6959	898	5387
CALVES	100	23	.31	.04	.24	2602	336	2015
		250	(.45)(365) = 41063					

	N	P	K
Lagoon (5%) = 41063(.05)	2053	319	1186
Solid Waste = 41063(.75) + 3942			
+ 6959 + 2602	52513	7819	32460
% Retained			

	Storage	Application	Den.	N
Lagoon	.70	.75	.90	970
Solid Waste	.55	.70	.90	18196
	52513(.55)(.70)(.90) = 18196			

	N	P	K	
Lagoon	970	319	1186	lbs/yr for
Solid Waste	18196	7851	32460	Land Application

$$364.5 \text{ AU} \left(\frac{1.37 \text{ ft}^3}{\text{AU DAY}} \right) (365) = 182268 \text{ ft}^3/\text{yr.}$$

Solid Waste

$$100 \text{ tons straw} \left(\frac{128 \text{ ft}^3}{\text{ton}} \right) = 12800 \text{ ft}^3/\text{yr.}$$

$$\text{Solid Waste Volume} = 182268 \text{ ft}^3$$

	N	P	K	ft ³	N	P	K (15/ft ³)
Solid Waste	18196	7851	32460	182268	.11	.04	.18
	18196 / 182268 = .09916	N/.90 Den.	S.W. = .11				

Appendix B

Third Party	Address	Phone number	City	Acres	N lbs	P lbs	K lbs
Steve Nash	10 Gulley Rd	337 - 3981	Homedale	100	11275	4100	18450
Steve Lootens	Jump Creek Rd	337 - 4953	Homedale	100	11275	4100	18450
Gordon Trout	Box 816	337 - 4160	Homedale	100	11275	4100	18450

W. L. L.

W. L. L. 2009

Landowner/Operator- DAVID WILLIAMS
 Location- HOME 2
 Assisted by- STEVE THOMAS

Date- 10-17-2000

VOLUME OF WASH WATER

REF: IAWMG page 63

DESCRIPTION	RANGE	SELECTED GAL/DAY	CF/DAY
Cow Preparation-			
Manual.....(.5-7Gal or 0.06-1CF /Cow-Day)		0.1	0.013
Automatic- Stall Wash... (5-15Gal or 1-2CF /Cow-Day)			
Sprinkler Wash..... (25-40Gal or 3-5.5CF /Cow-Day)			
Total Daily Volume = 250 Cows X Total Selected Amount=		25	3.25
Bulk Tank- Automatic..... (60-110Gal or 8-15CF /Wash)		30	4.011
Manual..... (30-50Gal or 4-7CF /Wash)			
Miscellaneous Equipment..... (25-35Gal or 3-5CF /Wash)		20	2.674
Pipelines..... (75-150Gal or 10-20CF /Wash)		80	10.695
Milkhouse and Parlor..... (300-700Gal or 40-90CF /Wash)		1000	133.69
Holding Area..... (500-1200Gal or 70-160CF /Wash)		0	0
Total Daily Volume= 2 Washes X Total Selected Amount=		2,260	302.14

RAINFALL RUNOFF AREA CONTRIBUTING TO STORAGE

DESCRIPTION	AREA IN SQUARE FEET
Roof.....	
Concrete Slab, Scraped Daily, (Y/N)- NO	
Unsurfaced Lot.....	1000
Total-	1,000 SF

CLIMATIC AND HYDROLOGIC DATA

REF: IAWMG Pages 64 & 66-67

CLIMATIC STATION- PARMA 25YR-24HR STORM RAINFALL- 1.80 Inches

Month	Average Monthly Precipitation	in Inches Evaporation	% Lot Runoff Factors Concrete	Unpaved
JAN	1.73	0.20	25	17
FEB	1.16	0.30	25	17
MAR	1.36	0.65	20	17
APR	0.94	2.10	30	10
MAY	0.95	4.60	30	10
JUN	0.99	6.20	35	10
JUL	0.29	8.20	30	10
AUG	0.58	6.50	30	10
SEP	0.71	3.80	35	10
OCT	0.76	1.20	30	10
NOV	1.32	0.40	35	10
DEC	1.65	0.30	25	17
ANNUAL	12.44	34.45		

For Dec thru March the 1 in 5 year Precip Values are used
 Average Precip Values used for other months.

Date- 10-17-2000

	<<<<<<<<<<RUNOFF IN CUBIC FEET>>>>>>>>					
	OSF	Concrete	* 1.00SF	13.020SF		
Month	Roof	Slab	Unsurfaced Lot	Storage Surface	Monthly Totals	
JAN	0	0	36	1,877	1,913	
FEB	0	0	24	1,259	1,283	
MAR	0	0	23	1,476	1,498	
APR	0	0	8	1,020	1,028	
MAY	0	0	8	1,031	1,039	
JUN	0	0	8	1,074	1,082	
JUL	0	0	2	315	317	
AUG	0	0	5	629	634	
SEP	0	0	6	770	776	
OCT	0	0	6	825	831	
NOV	0	0	11	1,432	1,443	
DEC	0	0	34	1,790	1,825	

TOTAL MONTHLY INFLOWS ENTERING LIQUID STORAGE FACILITY

	<<<<<<<<<<INFLOW IN CUBIC FEET>>>>>>>>>>>>>>>>					
Month	Surface Runoff	Evaporation	Seepage	Wash Water	Manure	CUMULATIVE Totals
OCT	831	-1,302	0	9,467	531	9,527
NOV	1,443	-434	0	9,162	514	20,212
DEC	1,825	-326	0	9,467	531	31,709
JAN	1,913	-217	0	9,467	531	43,403
FEB	1,283	-326	0	8,551	480	53,390
MAR	1,498	-705	0	9,467	531	64,181
APR	1,028	-2,279	0	9,162	514	72,606
MAY	1,039	-4,991	0	9,467	531	78,652
JUN	1,082	-6,727	0	9,162	514	82,683
JUL	317	-8,897	0	9,467	531	84,101
AUG	634	-7,053	0	9,467	531	87,680
SEP	776	-4,123	0	9,162	514	94,009
ANNUAL	13,669	-37,378	0	111,467	6,251	

Equates Entering Liquid Storage Facility Based on 180 Day S			
1.80 Inch 25YR-24HR Storm Rainfall=	1,953	CF or	0.0 AF
180 Day Precipitation - Evaporation=	4,568	CF or	0.1 AF
Roof, Slab and Lot Runoff=	102	CF or	0.0 AF
25Yr-24Hr Rainfall Runoff=	82	CF or	0.0 AF
Seepage=	0	CF or	0.0 AF
Washwater=	54,970	CF or	1.3 AF
Manure=	3,083	CF or	0.1 AF
0 Year Sludge Accumulated=	0	CF or	0.0 AF
Existing Storage=	0	CF or	0.0 AF
Existing Storage Surface Area=	15,840	SF or	0.0 AC
Total storage Volume=	72,691	CF or	1.7 AF



Idaho Fertilizer Guide

Irrigated Field Corn for Silage or Grain

B. D. Brown and D. T. Westermann

The following fertilizer guidelines are based on relationships established between University of Idaho soil tests and crop yield response. The fertilizer rates suggested are designed to produce the yields shown if other factors are not limiting production. The rates will be accurate for your field provided (1) the soil samples are properly taken and represent the area to be fertilized; (2) the crop history information supplied is complete and accurate; (3) the yield goal is realistic; and (4) good crop management practices are used.

Nitrogen (N)

Adequate N is necessary for maximum economic production of irrigated field corn used for silage or grain. Fertilizer N represents by far the largest share of the fertilizer costs for field corn in Idaho. The amount of N required depends on many factors that influence total corn production and quality. These factors include length of growing season, corn hybrid, previous crop, past fertilizer use, soil type, leaching hazard and previous manuring. Estimates of both the N available to corn during the season and the yield potential of the crop should be considered when determining N fertilizer rates.

Nitrogen Soil Test — A N soil test can evaluate the carryover N ($\text{NO}_3\text{-N}$ plus $\text{NH}_4\text{-N}$) from previously fertilized crops as well as the N mineralized (organic N release) since the last crop was actively growing. Soil samples should be collected before planting in foot increments to a depth of 2 feet unless the roots are limited by restrictive soil horizons or high water tables. Deeper sampling

may be justified if the effective rooting depth extends below 2 feet.

Potential Yield — Fertilizer N rates should reflect the corn yield growers can reasonably expect under their soil and management conditions. The historic yield obtained in a specific field or area provides a fair approximation of yield potential given a grower's traditional crop management. Projected changes in crop management designed to apprecia-

bly alter production may require upward or downward adjustment of yield potential.

Fertilizer N Requirement — The fertilizer N requirements for field corn silage or grain based on soil test N and potential yield are shown in Tables 1 and 2. The N requirements for grain are 10 to 15 pounds per acre higher than those for silage. Grain yield is more susceptible to N shortages than silage yield. The

Table 1. Recommended fertilizer N rates (lb/acre) for field corn harvested for silage as affected by yield level and soil test N.

Soil test N (ppm)	Silage yield (tons/acre)				
	20	25	30	35	40
0 ¹	210	230	250	270	295
10	170	190	210	230	255
20	130	150	170	190	215
30	90	110	130	150	175
40	50	70	90	110	135
50	10	30	50	70	95
60	0	0	10	30	55
70	0	0	0	0	15

¹Soil test N values summed for the 0 to 12 and 12 to 24 inch depths.

Table 2. Recommended fertilizer N rates (lb/acre) for field corn harvested for grain as affected by yield level and soil test N.

Soil test N (ppm)	Grain yield (bu/acre)						
	100	125	150	175	200	225	250
0 ¹	215	235	255	280	300	320	340
10	175	195	215	240	260	280	300
20	135	155	175	200	220	240	260
30	95	115	135	160	180	200	220
40	55	75	95	120	140	160	180
50	15	35	55	80	100	120	140
60	0	0	15	40	60	80	100
70	0	0	0	0	20	40	60

¹Soil test N values summed for the 0 to 12 and 12 to 24 inch depths.

fertilizer N requirements are based solely on soil test N and yield potential and do not reflect differences among soils in their organic N release rates.

The recommended fertilizer N rates do not account for N cycling as influenced by previous crops. Add 20 pounds N per acre for each ton of straw or stover plowed under to a maximum of 50 pounds per acre. Straw yields are normally 3 to 4 tons per acre and are not always related to grain yields. Winter wheat generally produces more straw than spring wheat or barley. Fertilizer N rates should be reduced 60 pounds per acre when corn follows alfalfa.

Timing N Applications — Coarse-textured soils, including sandy loams, loamy soils and sands, may lose N from leaching. For these soils, sidedress a portion of the N at the time of the last cultivation. Sprinkler irrigation of corn under center pivots provides increased flexibility for providing N during the season. With sprinklers N can be injected into the system and applied with the water. On silt loam soils, split applications of N have not proven more effective as long as preplant N is adequately incorporated.

High N rates (approaching 300 pounds per acre) broadcast and incorporated before planting may reduce early season corn growth. If high N rates are needed, split applications should be considered.

Phosphorus (P)

Adequate P is necessary for maximum production of field corn. The soil test for

Table 3. Fertilizer P rates (lb/acre) based on soil test P and soil lime contents.

Soil test P ¹ (ppm)	Lime content ²		
	5	10	15 or more
	P ₂ O ₅ lb/acre		
0	180 ³	240	300
5	100	160	220
10	20	80	140
15	0	0	60
20	0	0	0

¹Soil extractant is NaHCO₃.

²Lime content measured as calcium carbonate equivalent.

³P₂O₅ × 0.44 = P or P × 2.29 = P₂O₅.

P is based on samples collected from the first foot of soil. The soil is extracted with sodium bicarbonate. Economic response to fertilizer P is more likely with cooler soil temperatures and soils with high lime content, particularly when planting long season hybrids. Fertilizer P rates based on soil test P and soil lime contents are given in Table 3. Phosphorus is an immobile nutrient that does not move appreciably from where it is placed. It should be mixed into the seedbed or banded within easy reach of the seedling roots before or during the planting operation.

Potassium (K)

Field corn requires adequate K for optimum growth. Soil test K can be useful in determining the need for K fertilizers. The soil sample is taken from the first foot of soil and extracted with sodium bicarbonate. Fertilizer K rates based on soil test K are given in Table 4.

Table 4. Fertilizer K rates (lb/acre) based on soil test K.

Soil test ¹ (ppm)	Apply (K ₂ O lb/acre)
0	240 ²
50	160
100	80
150	0

¹Soil extractant is NaHCO₃.

²K₂O × 0.83 = K or K × 1.20 = K₂O.

Micronutrients (B, Cu, Fe, Mn, Zn)

Zinc (Zn) deficiencies occur primarily on soils that are eroded, leveled or where the exposed subsoil is higher in lime. The DTPA test on soil samples collected from the first foot can be used for identifying Zn fertilizer needs. Apply 10 pounds of Zn per acre when the soil test measures less than 0.6 ppm.

Other micronutrients have not been shown to limit corn production. "Shotgun" applications of micronutrient mixtures containing boron (B), copper (Cu), iron (Fe) and manganese (Mn) "for insurance" have not been shown to be economical and are not recommended.

Sulfur (S)

The major corn-growing regions of Idaho should not experience shortages of S. Areas with S deficiencies include some irrigated areas where both the soil and irrigation water are low in S. Snake River water is known to have high S concentrations. Coarse-textured soils including sandy loams, loamy sands and sands would be more susceptible to S deficiencies than silt loam soils. Where the need for S is evident, use 30 pounds per acre of sulfate-sulfur (SO₄-S).

Salinity (Salts)

Field corn has a low to moderate tolerance to accumulated salts. Soils with total salt readings above 3 or 4 mmhos/cm can be cropped effectively. Readings up to 6 are also satisfactory although more careful water management may be required.

General Comments

1. High plant populations (above 28,000 to 30,000) and early plantings of longer season hybrids in the Treasure Valley will respond to high N rates provided there are no other limiting factors.

2. High N rates will not compensate for reductions in stand or delayed plantings.

3. High plant populations of field corn are more susceptible to N shortages because of greater competition among plants for limited N.

4. Sidedressing may cause root pruning depending on plant size, distance of shank from the row and placement depth.

5. Irrigation, weed and disease control, corn hybrid variety and plant population all can influence the effectiveness of fertilizer applications.

6. High N rates (above 300 pounds per acre) broadcast and incorporated before planting may reduce early season corn growth. If high N rates are needed, split applications should be considered.

7. On sandy textured soils subject to leaching, sidedress a portion of the N at the time of the last cultivation. Under sprinkler irrigation, N can be injected through the lines throughout the season. On silt loam soils, split applications of N have not proven more effective as long as preplant N is adequately incorporated.

9. Add 20 pounds N per acre for each ton of straw or stover plowed under up to a maximum of 50 pounds per acre.

The Authors — B. D. Brown is Extension crop management specialist and assistant Extension professor of plant science at the University of Idaho Southwest Idaho Research and Extension Center, Parma. D. T. Westermann is affiliate professor of soil science, cooperating USDA, at the Snake River Conservation Research Center, Kimberly.

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Idaho Fertilizer Guide

Irrigated Alfalfa In Southern Idaho

Raymond G. Gavlak, Extension Soils Specialist

The following fertilizer guidelines are based on relationships established between University of Idaho soil tests and crop yield response. The fertilizer rates suggested are based on research results and are designed to produce above-average yields if other factors are not limiting production. Thus, the fertilizer guide assumes use of good crop management practices.

The suggested fertilizer rates will be accurate for your field provided (1) the soil samples represent the area to be fertilized and (2) the crop history information supplied is complete and accurate.

Nitrogen

Nitrogen (N) fertilizer is generally not needed for alfalfa since a healthy alfalfa stand is capable of fixing adequate levels of N. Responses to applied N usually indicate the alfalfa stand is not effectively nodulated due to lack of proper seed inoculation at planting, or that the stand is aging.

Soils containing 20 to 30 pounds (4 to 7.5 ppm) of nitrate-nitrogen ($\text{NO}_3\text{-N}$) in the top 12 inches have sufficient N to establish a stand of alfalfa seeded alone. Adding fertilizer N at establishment reduces nodule number and nodule activity.

Establishing alfalfa with a companion crop is not recommended because the alfalfa stand typically is reduced by the excessive competition from the companion plantings. When growers plant alfalfa with a companion crop, both crops compete for the N. Under these conditions, N rates of 30 to 40 pounds per acre are suggested to establish alfalfa stands.

Phosphorus

Alfalfa responds well to applied phosphorus (P). The need for P fertilization can be determined by a soil test.

For best results, P fertilizers should be applied on established stands in the fall. Rates of P relative to soil test levels are given in Table 1. The recommended application should be sufficient for 2 years of production.

Table 1. Phosphorus fertilizer rates based on a soil test.

Soil test* (0 to 12 inch)	Apply (P_2O_5)
(ppm)	(lb/acre)
0	160
3	120
7	60
over 10	0

*P test by NaHCO_3 extraction.

Potassium

Alfalfa has a high potassium (K) requirement. Recommended K fertilization levels are determined by soil test (Table 2). Broadcast and incorporate K at establishment or apply in the fall or early spring on established stands.

Table 2. Potassium fertilizer needs based on a soil test.

Soil test* (0 to 12 inch)	Apply (K_2O)
(ppm)	(lb/acre)
0	240
56	160
112	80
150	0

*K test by NaHCO_3 extraction.

Sulfur

Mountain valleys and foothill areas that receive higher amounts of precipitation and/or that are irrigated with low sulfur-containing water are likely areas for sulfur (S) deficiency. Areas irrigated with water from the Snake River or any water containing the sulfate (SO_4)

Alfalfa and other legumes require more S than grasses. Plant tissue testing is an excellent tool for detecting S-deficient alfalfa. Samples should be analyzed for total N and total S. These values are used to calculate the nitrogen/sulfur ratio, which should be less than 15. When the ratio is greater than 15, an S deficiency is suspected.

Soils testing less than 8 ppm $\text{SO}_4\text{-S}$ for 0- to 12-inch soil depth should receive 40 pounds S per acre. This rate of application should provide adequate sulfur for 2 years of production. Many southern Idaho soils contain accumulated S below the 12-inch depth. Although the 0- to 12-inch soil zone may be low in S (8 ppm), the soil below 12 inches may supply enough S for alfalfa production. Thus, testing the soil at both 0- to 12- and 12- to 24-inch depths is advised for a good S recommendation.

Fertilizer S sources include gypsum (CaSO_4) and elemental sulfur. S is also included in some N, P and K fertilizer materials. Elemental S must be biologically converted to the SO_4 form to be used by the plant. The rate of conversion depends on soil temperature, soil water content and particle size of the elemental S applied. To correct an S deficiency the year of application, use a fertilizer containing SO_4 as the readily available S source. Elemental S can be used to provide long term S release.

Micronutrients

Zinc (Zn) deficiencies on alfalfa have not been observed in Idaho. Crops such as beans, corn, potatoes and onions would normally exhibit Zn deficiency before alfalfa. Zinc applied to any of those crops would have sufficient residual for alfalfa.

Boron

Alfalfa is sensitive to low soil boron (B). B deficiencies have been observed in southern Idaho, but they are

not widespread. Deficiencies normally occur on acidic soils (pH less than 7.0) and droughty (gravelly and sandy) soils. If the soil tests less than 0.25 ppm B, apply 1 to 3 pounds per acre of B. Do not use higher rates because B in excessive amounts is toxic to plants.

General Comments

1. Complete information on cultural practices necessary for alfalfa production is contained in University of Idaho Current Information Series 144, *Producing Maximum Yields of Irrigated Alfalfa Hay*.
2. Irrigation, weeds and insects can influence the effectiveness of a fertilizer application.
3. Alfalfa fields in southern Idaho frequently become yellow during the regrowth of the second and third crop. These fields have not responded to applications of fertilizer to correct this temporary yellowing condition.
4. Alfalfa can become a cash crop in the rotation by the application of needed management inputs such as water, fertilizer and pesticides and by timely harvesting. Alfalfa quality is enhanced by cutting at the early bud stage and more frequently during the growing season. This practice will reduce stand life, however.
5. Alfalfa hay should be analyzed to determine P content. Phosphorus is important for animal nutrition and can greatly influence animal performance and animal health. Fertilization can increase P content of forage.
6. Applications of S have been shown to reduce alfalfa selenium (Se) concentrations on soils low in available Se. Levels of Se above 0.1 ppm in the dry forage are considered adequate to prevent white muscle disease and other disorders related to limited Se forage.



Idaho Fertilizer Guide

Irrigated Wheat

Bradford D. Brown, Extension Crop Management Specialist, Parma

The following fertilizer guidelines are based on relationships between University of Idaho soil tests and wheat yield responses. The fertilizer rates suggested are based on research results and are designed to produce above average yields if other factors are not limiting production. Thus, the fertilizer guide assumes use of good management practices.

The suggested fertilizer rates will be accurate for your field provided: (1) the soil samples were properly taken and represent the area to be fertilized; and (2) the crop history information supplied is complete and accurate.

Nitrogen (N)

Adequate nitrogen is necessary for maximum production of irrigated wheat. Nitrogen represents, by far, the largest share of fertilizer costs for wheat in Idaho. The amount of nitrogen required depends on many factors which influence total wheat production and quality. Both yield potential and available nitrogen ($\text{NO}_3 + \text{NH}_4$) should be considered when determining N fertilizer rates.

Total N Required Based on Potential Yield

Fertilizer N rates should be used which correspond to the yield growers can reasonably expect under their soil and management conditions. The historical wheat yield obtained by a grower in a specific field or area generally provides a fair approximation of yield potential given a grower's traditional crop management. Projected changes in crop management (i.e. improved variety, better disease and weed control) designed to appreciably increase production may require adjustment of yield potential.

Research has shown that the available N required to produce a bushel of irrigated wheat depends on a variety of crop management practices. Factors such as weed, insect and disease control as well as irrigation, planting date and soil type can influence the N required by wheat for maximum yield. The results of irrigated field trials in the Boise and Magic valleys suggest as a rule that 2 pounds available N per bushel of wheat is required for maximum production up to 120 bushels per acre. Above 120 bushels per acre, the factor is somewhat less than two. Table 1 gives total available N required for various yield potentials.

Table 1. Total available N requirement of wheat based on potential yield.

Bu/acre*	80	100	120	140	160
lb N/acre	160	200	240	270	300

*Potential yield based on historical average.

Available Nitrogen

Available N in the soil includes mineralizable N (released from organic matter during the season) and inorganic N as nitrate (NO_3) and ammonium (NH_4). Each component of available N (mineralizable and inorganic) must be estimated for accurate determination of optimum fertilizer N rates.

Mineralizable Nitrogen

Soils vary in their capacity to release N from organic matter during the growing season. The amount of N released from soil organic matter depends on such factors as soil type, soil moisture, soil temperature and previous crops. Use a value of 45 pounds N per acre for irrigated wheat unless the capacity of a specific soil to release N is known.

Nitrogen Soil Test

The residual soil inorganic nitrogen ($\text{NO}_3 + \text{NH}_4$) can be evaluated most effectively with a soil test. Soil samples should be collected in foot increments to a depth of 2 feet unless roots are restricted by dense soil layers or high water tables.

To convert soil test $\text{NO}_3\text{-N}$ and $\text{NH}_4\text{-N}$ values to pounds N per acre, total the N values (ppm) for each foot increment of sampling depth and multiply times 4 as in Table 2. For example:

Table 2. Soil test reads.

Depth (inches)	NO_3 (ppm)	NH_4 (ppm)	Sum (ppm)	Inorganic N* (lb/acre)
0 to 12	13	2	15	60
12 to 24	6	2	8	32
Total	19	4	23	92

*ppm $\times 4 = \text{lb/acre}$

Previous Crop Residue

Nitrogen associated with decomposition of previous crop residues should also be considered in formulating N fertilizer application rates. Residues which require additional N for decomposition include cereal straw and corn stalks. Research has shown 15 pounds N are needed per ton of straw returned to the soil up to a maximum of 50 pounds.

Row crop residues (potatoes, sugarbeets, onions) generally do not require additional N for decomposition. Consequently, these residues have little effect on N needs of wheat.

Legume residues from beans, peas and alfalfa can release a significant amount of N the following crop season. This N is derived from the decomposition of both plant tops and nodule root systems.

Table 3 estimates the N released from or tied up with the return of previous crop residues.

Table 3. Estimated available N associated with return of previous crop residues.

Previous crop	N per acre
Grain or corn (residue returned)	-50
Grain or corn (residue removed)	0
Row crops (potatoes, sugarbeets, onions)	0
Beans and peas	+40
Alfalfa	+60

Calculation of N Application Rates

To calculate the fertilizer N application rate, four values must be estimated: (1) total N needed to produce a given potential yield, (2) mineralized N, (3) inorganic N ($\text{NO}_3 + \text{NH}_4$) shown by soil test and (4) previous crop residues returned to the soil. A sample calculation follows in Table 4 given this information: potential yield is 120 bushels per acre, 45 pounds of

N per acre is expected to be mineralized, inorganic N measures 92 pounds per acre and previous crop was potatoes.

Table 4. Calculation of N application rates.

Values	lb/acre
Total N required (Table 1)	240
Minus mineralizable N	-45
Minus inorganic N (see sample calculation)	-92
Crop residue N factor (Table 3)	0
N fertilizer required (lb/acre)	103

Estimate Based on Previous Crop

The amount of N fertilizer required for wheat can be roughly estimated based solely on the previous crop if no soil test is available. Table 5 gives generalized recommendations based on previous crop and yield potential.

The values in Table 5 were derived based on the following assumptions: (1) 3 to 4 tons of residue are associated with corn and grain crops, thus requiring a maximum of 50 pounds N per acre; (2) residual inorganic N carried over from previous grain or corn crops is 30 pounds per acre; (3) residual inorganic N carried over from previous row crops is 20 pounds N per acre greater than with grain or corn crops; (4) available N mineralized from the decomposition of previous crop residues is 45 pounds per acre; (5) 2.0 pounds available N per acre are required for each bushel up to 120 bushels per acre and somewhat less for yields exceeding 120 bushels per acre.

Table 5. Estimated N fertilizer requirements based on previous crop and potential yield.

Previous crop	Estimated N fertilizer required* potential yield (bu/acre)				
	80	100	120	140	160
Grain or corn (residue returned)	130	170	210	240	270
Grain or corn (residue removed)	80	120	160	190	220
Row crops (potatoes, sugarbeets, onions)	60	100	140	170	200
Beans and peas	40	80	120	150	180
Alfalfa	20	60	100	130	160

* Based on the need for 2.0 pounds N per acre for each bushel up to 120 bu/acre and somewhat less for potential yield exceeding 120 bu/acre.

Actual wheat N requirements can be quite different from recommendations if these assumptions are not met. For example, residual N carried over from over-fertilized row crops can be high enough to completely eliminate the need for N fertilizer. Nitrogen recommendations based on soil tests can prevent costly unnecessary fertilizer N applications.

Phosphorus (P)

Wheat requires little phosphorus compared to the P requirements of other crops although minimum soil levels are necessary for maximum production. Adequate P is especially necessary for winter hardiness. Soil tests can indicate whether soils require phosphorus fertilization for maximum wheat production. Soil samples are taken from the 0 to 12 inch depth. Table 6 gives phosphorus fertilizer rates based on soil tests.

Table 6. Phosphorus fertilizer rates based on soil tests.

Soil test P*	P rates of application (lb/acre)	
	P ₂ O ₅	P**
0 to 12 inches		
0	160	70
4	120	53
8	80	26
over 12	0	0

*NaHCO₃ extraction

**Phosphorus is expressed as both the oxide and elemental forms:
 $P_2O_5 \times 0.44 = P$ or $P \times 2.29 = P_2O_5$

Broadcast plowdown, broadcasts seedbed incorporation or drill banding low rates of P with seed are effective methods of application. Drill banding may reduce the fertilizer P required. Drill banding high rates of P, especially ammonium phosphate fertilizers, can cause seedling damage. For more detailed discussion of banding, refer to PNW 283, *Fertilizer Band Location for Cereal Root Access*.

Potassium (K)

Wheat has a lower requirement for K compared to sugarbeets, corn or potatoes. Soil tests can be useful indicators of the need for K. Table 7 gives K rates based on soil tests. Potassium should be incorporated during seedbed preparation.

Table 7. Potassium (K) rates based on soil tests.

K soil test* (ppm) to 12 inches	Potassium rates (lb/acre)	
	K ₂ O**	K
0	240	200
22	160	133
46	80	66
over 68	0	0

*NaHCO₃ extract

**Potassium is expressed as both the oxide and elemental form:
 $K_2O \times 0.84 = K$ or $K \times 1.20 = K_2O$

Sulfur (S)

Sulfur requirements for wheat will vary depending on soil texture, previously incorporated crop residues, leaching losses, S content of irrigation water and S soil test. Wheat irrigated with Snake River water should not experience S shortages. Soils low in S (less than 10 ppm SO₄-S in the plow layer or 8 ppm in the 0

to 12 inch depth) should receive 20 to 40 pounds of S per acre.

Sulfur deficiency appears as a general yellowing of the plant early in the season and looks much like N deficiency. Plant analysis can be a useful means of differentiating between the two deficiencies. An N to S ratio of 17 in whole plant tissues is generally used for diagnosing sulfur deficient wheat. Sulfur deficient wheat has also been known to contain high nitrate nitrogen (NO₃-N) concentrations.

Micronutrients (Fe, Mn, Zn, Cu, B)

Micronutrient growth responses have not been observed in southern Idaho. Responses from micronutrient applications are not expected with wheat except occasionally on severely scraped soils.

General Comments

1. Excessive irrigation or heavy winter precipitation can result in movement (leaching) of nitrate nitrogen beyond root systems. This hazard exists on all soils but particularly on coarse textured soils such as sands, sandy loam, etc.
2. Nitrogen fertilizers containing ammonium (ammonium sulfate, anhydrous or aqua ammonia, or urea) are less subject to leaching losses when lower soil temperatures (less than 40°F) inhibit the microbial conversion of ammonium to nitrate.
3. Nitrogen fertilizers may be fall applied on medium textured soils if leaching or soil erosion are not serious hazards. Nitrogen applied in the spring will be used more effectively by wheat and is recommended especially on coarse textured soils. Late fall, split or spring N applications are also recommended when residues from previous grain or corn crops are returned to the soil.
4. Early spring N applications are more effective for increasing grain protein of irrigated hard red winter wheat. Nitrogen applied after the boot stage will contribute more to grain protein than to yield.
5. Most wheat varieties respond in a similar way to N. However, varieties differ in their tolerance of high N rates. High N contributes to lodging of varieties with poor straw strength.
6. Higher rates of N used with hard red wheat varieties to boost grain protein may be economical given an appropriate premium for protein. However, straw strength of wheat varieties should be considered to avoid severe lodging.
7. Nitrification inhibitors or other N stabilizers can prevent N leaching losses in soils susceptible to

leaching. These materials work by acting on the microbial population responsible for the conversion of ammonium to nitrate.

8. Phosphorus and potassium fertilizer should be applied before planting in the fall.

9. Avoid a heavy first irrigation on spring cereals to prevent water logging, reduced tillering and N leaching.

10. Weed, insect and disease control can increase the effectiveness of fertilizer applications.

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K during seedbed preparation or broadcast in the fall on established stands.

Rates of K needed for optimum forage production as determined by soil test are shown in Table 2.

Table 2. Potassium fertilizer rates based on soil test.

Soil test level* (0-12 inches) (ppm K)	Apply (pounds per acre)	
	(K ₂ O)	(K)**
0 to 40	200	166
40 to 75	140	116
75 to 110	80	66
over 110	0	0

*Potassium test (K) is by NaHCO₃ extraction.

**Potassium is expressed as both the oxide and elemental forms:
K₂O × 0.83 = K or K × 1.20 = K₂O.

Sulfur

Sulfur (S) demand is greater for legumes than grasses. Sulfur requirements for grass and legumes will vary with soil texture, leaching losses, S soil test and S content of irrigation water. Apply 30 pounds of S to soil testing less than 10 ppm sulfate-sulfur¹ (SO₄-S) in the plow layer.

Areas irrigated with water from the Snake River and other streams fed by return flow should have adequate S. High rainfall areas, mountain valleys and foothill areas are likely areas for S deficiencies.

Sulfur sources should be carefully selected due to variation in its availability to plants. Elemental sulfur must be converted to sulfate (SO₄⁼⁼) form by soil microorganisms before it can be taken up by plants. Conversion of elemental S to SO₄⁼⁼ may take several months in warm moist soils. Elemental S fertilizers cannot supply adequate levels of S the year of application. However, these elemental S sources can supply considerable S the year after the initial application. Sulfate-sulfur sources are recommended to alleviate deficiencies the year of application.

¹Water extractable with analysis by BaSO₄ turbidimetric method.

Micronutrients

Deficiencies of micronutrients such as zinc (Zn), copper (Cu), manganese (Mn) and iron (Fe) have not been observed on irrigated pastures in southern Idaho. Grasses and legumes are not sensitive to low levels of micronutrients as are row crops such as beans and corn.

Boron (B) deficiencies may be observed on legumes in gravelly textured soils. If the soil tests less than 0.25 ppm B², apply 1 to 3 pounds of B per acre. Do not use higher rates because B is toxic to plants in excessive amounts.

General Comments

1. Nitrogen and phosphorus are the elements needed most on Idaho irrigated pastures. Potassium, sulfur, zinc and boron may be needed. Their need is best determined by soil and plant tissue tests.
2. Legume population in a grass-legume mixture is reduced by nitrogen fertilization and increased by phosphorus and potassium addition when these nutrients are low in the soil.
3. Forage from properly fertilized grass or mixed grass-legume pastures has higher protein, providing higher quality livestock feed than unfertilized pastures.
4. Irrigated pastures make good use of sloping land, stony soils and shallow soils which are less desirable for row crops. Pastures reduce soil erosion during irrigation on sloping land.
5. Fertilizers are only one part of pasture management. Pastures are most profitable when plant selection, irrigation and harvest techniques are not limiting production.
6. Rotational grazing will provide more forage and greater returns than continuous grazing.

Contact your County Extension Agent if you have any questions regarding the interpretation of this information or for further information on your local needs.

²Hot water extractable with analysis by diazomethine method.

April 25, 2001

Legal Notice Department

Owyhee Avalanche

PO Box 97

Homedale ID 83628

RE: Application for Permit No. 57-11585

Dear LEGAL NOTICE DEPARTMENT:

Enclosed you will find a legal notice which we wish to have published in your newspaper on the dates indicated (once a week for two consecutive weekly issues). If you cannot publish the notice on the proposed dates, please contact us immediately.

An affidavit of publication must be submitted to the Department along with the publication bill. Please send the affidavit and bill to this office before 05/21/2001. Your cooperation is appreciated.

Sincerely

Sue Taylor

Senior Secretary

MICROFILMED

MAR 16 2004

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

57-11585

DAVE WILLIAMS
1103 MARKET STREET
HOMEDALE ID 83628

Point(s) of Diversion	NWNE	S22 T03N R05W Owyhee County	Source	GROUND WATER
Use:	STOCKWATER	01/01 To 12/31 0.71 CFS	32	AFA
Use:	COMMERCIAL	01/01 To 12/31 1 CFS	32	AFA
Use:	DOMESTIC	01/01 To 12/31 0.04 CFS	32	AFA
Total Diversion.		1 CFS	32	AFA

Date Filed: 03/19/2001

Place Of Use: STOCKWATER

T03N R05W S22 NWNE

Place Of Use: COMMERCIAL

T03N R05W S22 NWNE

Place Of Use: DOMESTIC

T03N R05W S22 NWNE

Remark: Applicant agrees to mitigate consumptive use in the future as needed

Permits will be subject to all prior water rights. Protests may be submitted based on the criteria of Sec 42-203A, Idaho Code

Any protest against the approval of this application must be filed with the Director, Dept. of Water Resource, Western Region, 2735 Airport Wy, Boise ID 83705 together with a protest fee of \$25.00 for each application on or before 05/21/2001. The protestant must also send a copy of the protest to the applicant.

KARL J DREHER, Director

Published on May 2 and 9, 2001

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MAR 16 2001