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DEPT. OF WATER RESOURCES
SOUTHERN REGION

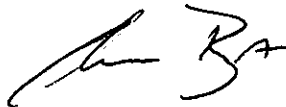
To the Idaho Department of Water Resources,

This letter is being directed to the Department of Water Resources to request that a licensing examination be done on the dairy facility associated with water right # 36-8538. My family purchased this dairy facility a few years ago from Mr. Wayne Hawkins. We have applied to Jerome County for an expansion of our CAFO permit which will allow us to milk approximately 300 additional cows. This expansion has been approved by the county, pending verification from IDWR that the facility has adequate water for the proposed expansion. In communicating with IDWR it came to our attention that the facility has a permitted water right that allows us to divert a maximum 0.4 CFS. This is equivalent to 289.6 acre feet per year if water were continuously pumped at this rate. This right however, has apparently never been licensed, and therefore does not specify the volume of water that we are allowed to pump. IDWR has informed me that verification of adequate water cannot be provided for an unlicensed right, but informed me that if requested in writing, a licensing examination could be conducted for the water right. For this purpose, I am formally requesting that a licensing examination be performed for water right # 36-8538.

Over recent years, several modifications have been made on the dairy facility, which have reduced water use. The water cooled vacuum pump and compressors have been changed to air cooled equipment and the freestall barns are now scraped instead of being flushed. We also plan on plumbing the pre cooler water that is currently wasted, to the water troughs which will save a significant amount of water. Water use estimates prepared by AGTEC Engineering have been included with this letter. Based on these estimates, when considering the existing and planned improvements actual water usage will likely be less than it was in the 90's when the water permit was issued.

A copy of the North Snake Ground Water Districts Annual Water Use Report for 2008 has been attached. Water use on the dairy was 110 acre feet in 2008. The report also shows that the water right is for 96 acre feet which we do not understand since there is supposedly no licensed volume associated with the right. It is impossible to know what the historic beneficial use was on this dairy since meters were not installed on the facility until 2004. However, as previously stated, is estimated that historical beneficial use may have very well exceeded the volume of water that is now being used on the dairy. I am respectfully requesting that the Department perform a licensing examination for this right as soon as possible and appreciate your help in this matter.

Respectfully Submitted,



Chris Dugan

Estimated water use in the 1990s when water permit was issued.



Dairy Water Use Requirements

Date 11/6/2008

Owner/Operator Info

Name: Chris Dugan Address: Telephone: 0
County: Jerome City: Jerome State: Idaho Zip Code: 83338

Facility Info

Name: Dugan Dairy Address: Telephone: 0
County: Jerome City: Jerome State: Idaho Zip Code: 83338

Dairy Stock Water Requirements

1992 Facility Water Use Estimate

Animal Type	# of Animals	Animal Weight (lbs)	Animal Units	Drinking Requirement (gal/hd/day)	Drinking Requirement (gal/day)	Total Drinking (acft/yr)	Reference
Lactating cow 14	700	1,400	980.0	41.7	29,208	32.72	Woodward-Kentz Equitation, Inc., Kentz, Vanston Farms Company
none	0	0	0.0	0.0	0	0.00	N/A
Dry Cow 14	110	1,400	154.0	14.0	1,540	1.73	Water intake and quality for Dairy Cattle, Richard C. Adams & William E. Shorne, Department of Dairyland
none	0	0	0.0	0.0	0	0.00	N/A
Heifer 10	690	800	552.0	9.4	6,452	7.23	Fresh water needs for Dairy Farms, Dean Paul G. Ott Extension Specialist
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
Totals	1,500		1,686.0		37,199	41.67	

Stock water requirement in acre ft/ year 41.7
Stock water pumping diversion in cfs 0.06



Wash Water Sizing

	Barn 1	Barn 2	Barn 3	Barn 1 Breakdown below
# Cows milked	700	0	0	
Stations/side	18	0	0	
Strings/milking	39	0	0	
Milkings per Day	3	0	0	3 milkings/day 0.2 gal/cow/milking
Cow Prep.	420	0	0	
Bulk Tank	1,400	0	0	
Pipelines	450	0	0	3 cycles/wash 50 gallons/cycle
Claw Back flush	1,575	0	0	0.25 gal/cycle 3 cycles/wash
Parlor Hand Washdown	2,700	0	0	30 gal/min 30 min/milking
Deck Sprays	2,100	0	0	90 gal/min 12 runtime sec 117 cycles/day
Freestall Flush	20,000	0	0	2500 gal/min 2 min/cycle 4 cycles/day
Holding Pen Flush	0	0	0	0 gal/min 0.166 min/cycle 24 cycles/day
Holding Pen Hand Washdown	2,700	0	0	30 gal/min 30 min/milking
Sprinkler Pen Water Use	0	0	0	0 heads 5 gpm/head 10 min/pen 100 % use
Milk Room Cleaning	100	0	0	
Water Trough Cleaning	79	0	0	
Miscellaneous	500	0	0	
	31,945	0	0	12 # of troughs 100 gal/trough 2 #/month
Yearly Parlor Wash Volume	11,659,925 Gallons/year			
Yearly Parlor Wash Volume	35.79 Acre Ft/year			
Commercial Diversion Rate	0.049 CFS			

Notes

This water use estimate is intended to estimate the water use of this facility in 1992 during the water right proofing period. This facility was originally designed to be a freestall flush facility. The freestall barn was designed for 900 milking cows. The water right currently says 700 cows. Upon start up the facility also had water cooled equipment. Some of this equipment has been replaced to date such as the compressor and vacuum pump. The plate cooler water is proposed to be plumbed to cows in 2009. In 1992 it was common for flush facilities to use fresh water to flush the freestall particularly during the summer. Alleys are flushed with 2000-5000 gpm for 5-10 minutes 3 to 4 times per day. This facility has 4 alleys in the freestall. We have estimated only 2500 gpm for 3 min 1 cleaning per day to check the diversion rate.

	Barn 1	Barn 2	Barn 3	
Recyclable Water Use				
Milking Parlor Throughput	180	0	0	Cows/hr
Time Milking Per Day	11.7	0.0	0.0	hours/day
Plate Cooler Water Use	12,600	-	-	Gal/day
Water Cooled Compressor	7,000	-	-	Gal/day
Water Cooled Vacuum Pump	7,000	-	-	Gal/day
	26,600	-	-	Total Cooling
Water Use Evaluation				
Clean Water Use				
Cow Drinking water use				26600 Gal/day
Commercial Parlor Use				37199 Gal/day
Net Excess Cooling Water				31945 Gal/day
Yearly Parlor Cooling Volume (amount exceeding that recycled)				26600 Gal/day
				29.8 Acre Ft/year



Total Facility Water Use Requirements

Stock water Requirement	41.7 Acre Ft/yr	Gallons per day per animal unit
Commercial Parlor Use	35.8 Acre Ft/yr	56.8 gal/au/day
Additional Cooling Use	29.8 Acre Ft/yr	

Total Water Use Estimate	107.3 Acre Ft/yr	
Total Diversion Rate	0.15 Cubic Feet/Second (CFS)	66.5 GPM

(this diversion rate is the minimum rate required to pump the above water use estimate 24/7/365)

Existing Water Rights	Diversion rate	Volume	
		cfs	gal/day
36-8538	0.4		
		acre/ft/year	289.6 up to this volume depending on Licensing

total 289.6

References:

Cattle drinking requirements were calculated using published information from industry accepted sources or from table data. Typically the highest use estimate is reported with the corresponding source of information. In some cases the designer will override the source values. In those cases an overridden value may include an explanation for the override.

The following sources were evaluated for the milking and dry cow herds.

Fresh Water Needs for Dairy Farms, Dean Faulk U of I Extension Specialist
Water Intake and Quality for Dairy Cattle, Richard S. Adams & William E. Sharpe, Department of Dairy and Animal Science, Pennsylvania State University
Modified Kertz Equation, A.F. Kertz, Ralston Purina Company
Water Partitioning and Intake Prediction in Dry and Lactating Holstein Cows, J. B. Holter & W.E. Urban Jr., Journal of Dairy Science 1992

The following sources were evaluated for animals other than milking and dry cows.

Fresh Water Needs for Dairy Farms, Dean Faulk U of I Extension Specialist
Water Intake and Quality for Dairy Cattle, Richard S. Adams & William E. Sharpe, Department of Dairy and Animal Science, Pennsylvania State University
Water Requirements of Livestock, Daniel Ward & Kevin McKague, Ministry of Agriculture Food & Rural Affairs, May 2007

Estimated Future Use when fully expanded



Dairy Water Use Requirements

Date 6/23/2009

Owner/Operator Info

Name: Chris Dugan Telephone: 208-969-0041
 County: Jerome Address: Jerome State: Idaho Zip Code: 83338

Facility Info

Name: Dugan Dairy Telephone: 0
 County: Jerome Address: 111 S. 400 W. State: Idaho Zip Code: 83338

Dairy Stock Water Requirements

Animal Type	# of Animals	Animal Weight (lbs)	Animal Units	Drinking Requirement (gal/hd/day)	Drinking Requirement (gal/day)	Total Drinking (acft/yr)	Reference
Lactating cow 14	1,800	1,400	2,520.0	41.7	75,105	84.13	Moore-Kertz Equation, Ag-Tec, Version 1.0
none	0	0	0.0	0.0	0	0.00	N/A
Dry Cow 14	78	1,400	109.2	14.0	1,092	1.22	Water intake and quality for Dairy Cattle, Richard S. Adams & William E. Shaver, Department of Dairy and
none	0	0	0.0	0.0	0	0.00	N/A
Heifer 7.5	0	800	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
none	0	0	0.0	0.0	0	0.00	N/A
Totals	1,878		2,629.2		76,197	85.35	

Stock water requirement in acre ft/ year 85.4
 Stock water pumping diversion in cfs 0.12

Wash Water Sizing

	Barn 1	Barn 2	Barn 3	Barn 1 Breakdown below
# Cows milked	1,800	0	0	
Stations/side	0	0	0	
Strings/milking	0	0	0	
Milkings per Day	2	0	0	2 milkings/day 0.2 gal/cow/milking
Cow Prep.	720	0	0	
Bulk Tank	1,400	0	0	
Pipelines	300	0	0	3 cycles/wash 50 gallons/cycle
Claw Back flush	2,700	0	0	0.25 gal/cycle 3 cycles/wash
Parlor Hand Washdown	1,980	0	0	30 gal/min 33 min/milking
Deck Sprays	0	0	0	0 gal/min 0 runtime sec 0 cycles/day
Deck Flush	0	0	0	0 gal/min 0.166 min/cycle 48 cycles/day
Holding Pen Flush	0	0	0	0 gal/min 0.166 min/cycle 24 cycles/day
Holding Pen Hand Washdown	1,800	0	0	30 gal/min 30 min/milking
Sprinkler Pen Water Use	0	0	0	0 heads 0 gpm/head 0 min/pen 0 % use
Milk Room Cleaning	100	0	0	
Water Trough Cleaning	95	0	0	
Miscellaneous	500	0	0	12 # of troughs 120 gal/trough 2 #/month
	9,500	0	0	0
Yearly Parlor Wash Volume		3,467,500 Gallons/year		
Yearly Parlor Wash Volume		10.64 Acre Ft/year		
Commercial Diversion Rate		0.015 CFS		

Notes



Recyclable Water Use

	Barn 1	Barn 2	Barn 3
Milking Parlor Throughput	180	0	0 Cows/hr
Time Milking Per Day	20.0	0.0	0 hours/day
Plate Cooler Water Use	-	-	- Gal/day
Water Cooled Compressor	-	-	- Gal/day
Water Cooled Vacuum Pump	-	-	- Gal/day
			- Total Cooling Parlor Volume/day in gallons

Water Use Evaluation

Clean Water Use	0 Gal/day
Cow Drinking water use	76197 Gal/day
Commercial Parlor Use	9500 Gal/day
Net Excess Cooling Water	0 Gal/day
Yearly Parlor Cooling Volume (amount exceeding that recycled)	0.0 Acre Ft/year



Total Facility Water Use Requirements

Stock water Requirement	85.4 Acre Ft/yr	Gallons per day per animal unit
Commercial Parlor Use	10.6 Acre Ft/yr	32.6 gal/au/day
Additional Cooling Use	0.0 Acre Ft/yr	
Total Water Use Estimate	96.0 Acre Ft/yr	
Total Diversion Rate	0.13 Cubic Feet/Second (CFS)	59.5 GPM

(this diversion rate is the minimum rate required to pump the
above water use estimate 24/7/365)

Existing Water Rights	Diversion rate	Volume
36-8538	cfs	gal/day
	0.4	acre/ft/year

total

References:

Cattle drinking requirements were calculated using published information from industry accepted sources or from table data. Typically the highest use estimate is reported with the corresponding source of information. In some cases the designer will override the source values. In those cases an overridden value may include an explanation for the override.

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Water Requirements of Livestock, Daniel Ward & Kevin McKague, Ministry of Agriculture Food & Rural Affairs, May 2007

NORTH SNAKE GROUND WATER DISTRICT

2008 Water Measurement Annual Report

Summary Sheet

Dugan Dairy
111 S 400 W
Jerome, ID 83338
(208) 324-6741
(208) 969-0041

The following table summarizes the data that was measured and calculated on your well(s). The figures in the shaded columns will be submitted to the Idaho Department of Water Resources as your water measurement annual report. If you do not agree with this data, please call or email before June 20, 2009.

FLOWMETER

Point of Diversion	Name	Beginning	Ending	Multiplier	Total AF	GPM	CFS	Water Right CFS	Water Right AF	Last Year Measured	Water Right Acres	Actual Irrigated Acres
08S 16E 28 NWNW	Dairy Main Well	57	96	0.93	110	64.0	0.14	0.40	96	2007		
08S 16E 28 NWNW	Auxiliary Well						0.00					

We are uncertain where this volume comes from since this is not a licensed right.

Spence MAIN well 147206
Aux well 147209

Idaho Department of Water Resources

WMIS

Water Management Information System

Quick Search:

[For assistance, email WMIS Info](#)

Search Method:

Reporting District:

WMIS Number:

Legal Description:

Metal Tag Number:

You are logged in as cyenter

[Point Of Diversion](#) [PCC](#) [Flow Meter](#) [Time Clock](#) [Alternate](#) [Contacts](#) [Data Summary](#) [Other](#) [Logout](#)
Flow Meter Water Usage

You are viewing 400581; A0004660

[Click here to insert a new record.](#)

Edit	Delete	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2008	57.00	118.46		
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by Water Master	95.60	110.17		used audit data (95.2) for new transfer analysis. can replace with reported data. PLEASE NOTE MULTIPLIER CHANGE cy. Changed ending to WWC reading. Actual reading is 95859. No ARF submitted. INcludes A0004661. bdh
		Calibration Data		Acre Feet Qualifier	Preferred Method	
		Date:	10/10/2007 12:00:00 AM	No Monthly Recordings	FM	
		Factor	0.93			
		Vol. Multiplier:	1000000.0000			
		Vol. Unit	GAL			
Edit	Delete	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2007	19.87	113.95		
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by Water Master	57.00	105.97		No readings submitted. Includes A0004661. (values from audit, reflect last year and change in multiplier. cy.)
		Calibration Data		Acre Feet Qualifier	Preferred Method	
		Date:	10/10/2007 12:00:00 AM	Monthly Recordings	FM	
		Factor	0.93			
		Vol. Multiplier:	1000000.0000			
		Vol. Unit	GAL			
Edit	Delete	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2006	97.41	68.94		
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by Water Master	119.87	64.11		New meeter in June. Partial year. bdh ??Audit 19.874 MG. (mr) There is NOT a new meter here, the vol mutltiplier was changed. reported value 16286401 does not make

Calibration Data

Date: 10/10/2007 12:00:00 AM
 Factor 0.93
 Vol. Multiplier: 1000000.0000
 Vol. Unit GAL

Acre Feet Qualifier

Partial Year
 Measurement

Preferred Method

FM

sense given new multiplier.
 data based on audit. cy.

<u>Edit</u>	<u>Delete</u>	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2005	70163300.00	83.62		COMBINED WITH A0004660 JAN-DEC (bh) audit 97790569

Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate
Validated by Water Master	97411708.00	79.44	

Calibration Data

Date: 5/28/2003 12:00:00 AM
 Factor 0.95
 Vol. Multiplier: 1.0000
 Vol. Unit GAL

Acre Feet Qualifier

Monthly Recordings

Preferred Method

<u>Edit</u>	<u>Delete</u>	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2004	42250008.00	85.66		audit = 70849800. Begin totalizer changed to match end 2003 (cy)

Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate
Validated by IDWR	70163300.00	81.38	

Calibration Data

Date: 5/28/2003 12:00:00 AM
 Factor 0.95
 Vol. Multiplier: 1.0000
 Vol. Unit GAL

Acre Feet Qualifier

No Monthly Recordings

Preferred Method

<u>Edit</u>	<u>Delete</u>	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2003	14544155.00	85.03		end totalizer from audit. Both wells.

Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate
Validated by IDWR	42250008.00	80.78	

Calibration Data

Date: 5/28/2003 12:00:00 AM
 Factor 0.95
 Vol. Multiplier: 1.0000
 Vol. Unit GAL

Acre Feet Qualifier

No Monthly Recordings

Preferred Method

<u>Edit</u>	<u>Delete</u>	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2002	0.00	44.63	0.14	New Meter 6/2002. One meter two wells; all data this record. End odometer=NSG Audit reading
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by IDWR	14544155.00	42.40	0.13	

Calibration Data

Date: 5/28/2003 12:00:00 AM
Factor 0.95
Vol. Multiplier: 1.0000
Vol. Unit GAL

Acre Feet Qualifier

Partial Year
Measurement

Preferred Method

Edit	Delete	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		2001				Meter non-operational
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by IDWR				
		Calibration Data		Acre Feet Qualifier	Preferred Method	
				No Monthly Recordings		
Edit	Delete	Report Year*	Totalizer Start	Acre Feet Volume	Max Flow Rate (CFS)	Comments
		1999				IDWR audit read meter at 6107 (gpm 2-3-00)
		Validated	Totalizer End	Adjusted Acre Feet	Adjusted Max Flow Rate	
		Validated by IDWR				
		Calibration Data		Acre Feet Qualifier	Preferred Method	
				No Flow Measuring Device		

Idaho Department of Water Resources



Quick Search:

For assistance, email [WMIS Info](#)

Search Method:	Reporting District
Reporting District:	North Snake GWD
WMIS Number:	400581
Legal Description:	08S 16E 28 00 NW NW
Metal Tag Number:	A0004660

You are logged in as cyenter

[Point Of Diversion](#) [PCC](#) [Flow Meter](#) [Time Clock](#) [Alternate](#) [Contacts](#) [Data Summary](#) [Other](#) [Logout](#)

Flow Meter Calibrations

You are viewing 400581; A0004660

[Click here to insert a new record.](#)

Edit	Delete	Calibration Date/Time:* 10/10/2007 12:00:00 AM	Factor: 0.93
		Installed Meter Data: Installed Meter Flow: 69.00 Rate Unit:* GPM Rate Multiplier:* 1.0000 Volume Multiplier:* 1000000.0000 Volume Unit:* GAL Location: FAIR Comments: 49.429 the last digit is 1,000 gls. -- changed vol multiplier to MG (million gallons) based on audit info. cy.	Standard Meter Data: Standard Meter Flow: 64.00 Rate Unit: GPM Pipe Material: STEEL Outside Diameter (inches): 3.54 Wall Thickness (inches): 0.18 Downstream Distance (feet): 2.00 Upstream Distance (feet): 2.00 Calibration Confidence: FAIR
		Installed Meter Information: Serial Number: 248428T102 Installation Date: Meter Type: MAGNETIC	Manufacturer: DANFOSS Model Number: Mag 1300 Other Well:
Edit	Delete	Calibration Date/Time:* 5/28/2003 12:00:00 AM	Factor: 0.95
		Installed Meter Data: Installed Meter Flow: 62.70 Rate Unit:* GPM Rate Multiplier:* 1.0000 Volume Multiplier:* 1.0000 Volume Unit:* GAL Location: GOOD Comments: New meter installed in 2001 and completely online by 8/06/02.	Standard Meter Data: Standard Meter Flow: 59.30 Rate Unit: GPM Pipe Material: STAINLESS Outside Diameter (inches): 3.53 Wall Thickness (inches): 0.21 Downstream Distance (feet): 1.00 Upstream Distance (feet): 1.00 Calibration Confidence: FAIR
		Installed Meter Information: Serial Number: 248428T102 Installation Date: 6/1/2002 12:00:00 AM Meter Type: MAGNETIC	Manufacturer: DANFOSS Model Number: mag 3100 Other Well: A0004661
Edit	Delete	Calibration Date/Time:* 1/1/1995 12:00:00 AM	Factor:
		Installed Meter Data: Installed Meter Flow: Rate Unit:* GPM Rate Multiplier:* 1.0000	Standard Meter Data: Standard Meter Flow: Rate Unit: Pipe Material:

	Volume Multiplier:*	100.0000	Outside Diameter (inches):	
	Volume Unit:*	GAL	Wall Thickness (inches):	
	Location:	FAIR	Downstream Distance (feet):	
	Comments:		Upstream Distance (feet):	
			Calibration Confidence:	
Installed Meter Information:				
	Serial Number:	18458	Manufacturer:	GRAINLAND
	Installation Date:		Model Number:	400B
	Meter Type:	IMPELLER	Other Well:	