

MEMORANDUM

TO: File 45-7373

FROM: Daniel Nelson – Staff Hydrologist

DATE: August 25, 2016

SUBJECT: Licensing Review of Water Right 45-7373

This field exam was performed by Jim Zimmerman from our Northern Region office. There are a couple of issues that need to be addressed. Each will be addressed below:

Permit History:

This permit was filed in 1996 to increase the diversion rate from the same point of diversion and place of use as 85-7548. Water right 85-7548 was licensed for a much smaller diversion rate for the same acres. It was discovered during the field examination for 85-7548 that the permit holder had actually developed a system that diverted much more water than permit for 85-7548 allowed. Water right 85-7548 was licensed for 0.02 cfs and 9 af for 3 acres. The permit holder only requested an additional 0.04 cfs to bring the total diversion rate for irrigation up to 0.06 cfs or inch per acre. They could have requested up to 0.09 cfs, since irrigation of under 5 acres can have up to 0.03 cfs per acre, but they chose to limit the diversion rate.

Idaho Fish and Game wrote a letter requesting that a measurement device be installed on the system, and the agent reviewing the permit agreed with this recommendation. However, the permit was issued without a requirement for a measurement device at this time, but the Department include a condition that would require a measurement device in the future if needed.

The tax parcel data show the property has a new mailing address. The new mailing address as being 1511 Ash St, Kamiah, ID 83536. A change of address form will be sent to the permit holder.

Points of Diversion:

The point of diversion described in 85-7548 was placed approximately 380 feet north of the creek. The field examiner for 85-7633 provided GPS coordinates for the point of diversion which seem reasonable. I will correlate the point of diversion for 85-7548 to this location.

The place of use and point of diversion for this permit according to the Department's mapping system, appears to be in Government Lot 9 (SWNW) Section 12 in Township 33 North, Range 3 East. The permit shows the point of diversion and place of use in Government Lot 10 (SWNW) Section 12 in Township 33 North, Range 3 East. The point of diversion and place of use were described in the advertisement of the application as being in the SWNW of Section 12 in Township 33 North, Range 3 East. The application has a hand written government lot added onto the application in blue ink without any initials. There are other changes on the application, without initials, in black ink that appears to match the signature on the application. There is a Government Plat map in the file that doesn't describe Government Lot 9. There is some confusion in verifying this with the Government Plat maps. The original survey for this section shows the property in Government Lot 9. However, a supplemental plat map done in 1986 shows that Lot 9 was split creating Lot 39. The supplemental plat map didn't carry forward the Lot 9 designation on the remaining portion of the government lot. Please see the attached maps for reference.

I spoke with our GIS staff, and they informed me that the supplemental plat was only used to designate Lot 39, so the remaining portion would continue to be designated as Government Lot 9. The point of diversion will be corrected to include the Government Lot 9 description. Even though the plat maps are confusing and we have no idea who added the Government Lot number to the application, I have been told that we still need an amendment to change the legal description in the permit. Unfortunately, the mapping system at the time the application was reviewed was not as good as current technology, so this mistake was not caught by our staff.

Acres and Place of Use:

As stated above, the place of use was located in the Government Lot 10 (SWNW) of Section 12. Therefore, the amendment will also be used to correct the place of use descriptor.

The field examiner stated that there were 3 acres irrigated. The map I created in ArcMap also showed 3 acres being irrigated. I agree with the field examiner as to the number of acres actually irrigated.

Diversion Rate:

The diversion rates recommended by the field examiner didn't make sense when compared to the measurements made on 85-7548 and the sprinkler package described in the narrative. I have provided a couple of spreadsheet analyzing measurement method used, and my calculations suggest the field examiner could have performed the sprinkler test using a 1 gallon bucket, and then used the calculations for a 5 gallon bucket is used. I double checked my calculations with the sprinkler package and I believe my calculations are more accurate. My calculations also coincide with the measurement done on the same system for water right 85-7548. I believe the system uses 46.4 gpm or 0.10 cfs when using the system for irrigation, and 61.5 gpm or 0.14 cfs when using the system for commercial purposes.

The permit limited the irrigation use to 0.04 cfs and water right 85-7548 allows 0.02 cfs for irrigation use. The capacity of the irrigation system of 46.4 gpm or 0.10 cfs is greater than the permit and the water right, so I am going to recommend the full 0.04 cfs for the irrigation portion of this permit. The diversion rates from both this permit and 85-7548 are below the 0.03 cfs per acre allowed, so there shouldn't be any combined limitations for the irrigation diversion rates.

Commercial use was not included on water right 85-7548, so the full commercial diversion rate will need to be covered by this permit. The permit allowed a diversion rate of 0.45 cfs, but the capacity of the commercial system is limited to 61.5 gpm or 0.14 cfs. The field examiner recommended 0.03 cfs, but as stated above, but his calculations were based on the measurement taken that don't appear to be correct. The permit holder supplied a documentation on how the commercial use would be used for frost protection. In the literature provided, it states that approximately 67.3 gpm or 0.15 cfs would be needed per acre to make this type of frost protection viable. I checked the size of the orchard area, and it appears to be between 0.8 and 0.9 acres. Therefore, the diversion rate of 0.14 cfs for commercial purposes that was developed seems reasonable.

I am recommending a diversion rate of 0.04 cfs for the irrigation portion and 0.14 cfs for the commercial portion of this permit. The total diversion rate for this license will be 0.14 cfs. There won't need to be any combined limitation between this permit and water right 75-7548, since the two irrigation rates are additive. However, there will be a need to combine the two volumes, so we may include the diversion rate as a precautionary function. The commercial rate cannot be used when the property is being irrigated, so it would not factor into a combined use condition.

Volume:

The field examiner correctly determined the irrigation volume for this permit. However, water right 85-7548 allows full volume coverage for the same acre, so we will need a condition that limits the volume when the two rights are combined to 9 acre feet for the irrigation portion of this permit. We shouldn't include a volume on the face of the right, since the volume is completely accounted for in 85-7548.

There were two flaws with the field examiner's calculations of the volume for the commercial use. The field examiner calculated the commercial volume by multiplying the diversion rate times the number of days in the season of use. The first flaw in this calculation was the diversion rate used. The diversion rate should be 0.14 cfs and not the 0.03 cfs the field examiner calculated. The second flaw was that the commercial use would not run 24 hours a day 7 days a week. This type of use would cause more damage to the trees than the frost would.

On the weatherbase website used to store historic data for the National Weather Service, I found that the average number of days below freezing for the Kamiah area during the season of use is 34 days. The literature provided by the permit holder for this type of commercial use recommends that the water only run approximately 10 hours or 600 minutes per day. I calculated the commercial volume as follows:

$$(61.5 \text{ gpm} \times 600 \text{ minutes} \times 34 \text{ days}) / 325850 = 3.9 \text{ af.}$$

The field examiner only recommended 1.8 af, which would be approximately ½ of the volume needed for an average year. Since there will be no annual volume for the irrigation portion of this right, I will list the volume for the commercial use in the conditions limiting it to 3.9 af.

Overlapping Water Rights:

The only right that directly overlaps the point of diversion and place of use is 85-7548. There are other water rights in the same 40 acre tract, but none of those rights are for the permit holder.

Conditions:

Condition 1 (01M) and condition 3 will be carried forward to licensing. Condition 2 will be removed at licensing. Condition 4 will be changed to condition R66 as is standard. A condition will be added to limit the diversion rate, and a second condition will be added to limit the irrigation volume when this right is combined with 85-7548.

Issues to discuss with Shelley:

- 1.) An amendment was filed for a portion of this permit, but the lands associated with the amendment were not developed per the field examination. Do we give them a portion of the permit that was developed, or what do we do with the amendment
- 2.) There really is no proof that the well was used during the development period in the file. The size of the well was upgraded from a 40 Hp from the field exam of the existing water right license to a 60 Hp per the field exam on this permit, but there is nothing to confirm that water was actually diverted.



Permit 85-7633 -- 2004 Aerial Imagery

The Green Border is the place of use and the Green Dot is the point of diversion.

As you can see, the point of diversion and place of use are in Government Lot 9 not Government Lot 10.

[illegible]

Water Right No.: 85-7633
 Reviewer: Dan Nelson
 Date of Review: 5/22/2017

Sprinkler Measurements Made By Field Examiner

Sprinkler	min	sec	gal/min (5 gal bucket/ min.)	gal/min (1 gal bucket/ min.)
1	2	26	0.48667	2.433333
2	2	17	0.45667	2.283333
3	2	21	0.47	2.35
4	2	20	0.46667	2.333333
5	2	25	0.48333	2.416667
6	2	26	0.48667	2.433333
7	2	27	0.49	2.45
8	2	18	0.46	2.3
9	2	36	0.52	2.6
10	2	28	0.49333	2.466667
11	2	24	0.48	2.4
12	2	21	0.47	2.35
13	2	21	0.47	2.35
14	2	13	0.44333	2.216667
15	2	15	0.45	2.25
16	2	13	0.44333	2.216667
17	2	19	0.46333	2.316667
18	2	22	0.47333	2.366667
19	2	2	0.40667	2.033333
20	2	17	0.45667	2.283333
TOTALS			9.37	46.85
AVERAGE			0.4685	2.3425

The above sprinkler rates could not be achieved with the 2 Hp Pump. (See Theoretical Calculations)

Rates Per Sprinkler Chart.

20 Sprinklers @ 2.32 gpm/head 46.4 gpm This rate iss close to theoretical calculation at 45 psi.

30 Sprinklers @ 2.05 gpm/head 61.5 gpm This rate matches theoretical calculation at 35 psi

The measurements made by the field examiner didn't seem to match the sprinkler chart. I did some calculations using the theoretical calculation and it appears the field examiner was using a 1 gallon bucket not a 5 gallon bucket.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-33462
 Reviewer: Dan Nelson
 Date of Review: 5/11/2016

P/D No.:	Scenario 1	Scenario 2	Scenario 3	Scenario 4
PUMP HORSEPOWER	2	2	2	2
BOOSTER HORSEPOWER	0	0	0	0
PUMPING LEVEL	10	10	10	10
DISCHARGE PRESSURE	27.5	250	45	35
RATE OF FLOW (cfs)	0.17	0.02	0.11	0.14
	75	9	49	61

The above calculates the formula = $Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

I calculated a theoretical based on the flow rate of 75 gpm measured in the field exam 85-7548. 85-7548 field examiner stated that they measured the entire system using a bucket and stop watch at 75 gpm. The field examiner for 85-7548 also stated the permit holder was running 3/16 sprinklers with a pressure of 30 psi at the time. The sprinkler chart shows that 3/16 sprinklers at 30 psi put out approximately 5.75 gpm per nozzle. Taking this information 13 sprinklers with 3/16 nozzles would divert approximately 74.75 gpm. I ran the theoretical calculation, and it makes sense that if the system was operated at 27.5 psi, that this pump would produce 75 gpm (see Scenario #1). The measurements made for 85-7548 do make sense.

Unfortunately, the measurements taken by the field examiner for permit 85-7633 didn't make sense. The system would have had to been operating at approximately 250 psi in order to measure that small of diversion rate (see Scenario #4). This would cause damage to the pump and the sprinkler system.

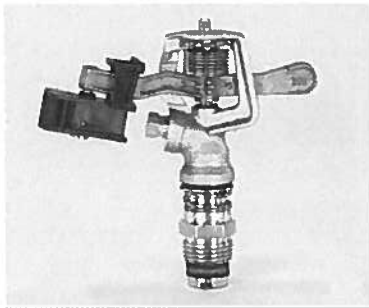
Considering this discrepancy in diversion rates between the theoretical calculation and the sprinkler chart, I ran some comparison rates using the sprinkler chart for the sprinklers being used and adjusting the pressure in the theoretical calculation to match up probable flows. For the 20 sprinkler setup, I estimated a flow rate of 46.4 to 49 gpm (see Scenario #3). This seems reasonable, because there would be some additional losses in the lines due to the higher pressures. For the 30 sprinkler setup, I estimated 35 psi, which matched up almost identically (see Scenario #4). Therefore, I think the system was designed and actually diverted 46.4 gpm for general irrigation, and 61.5 gpm for anti-freezing flow rate for the commercial use. Further analysis of the calculations made by the field examiner for 85-7633 reveal that the field examiner was probably using a 1 gallon bucket instead of 5 gallon bucket. He must have measured using the 1 gallon bucket and mistakenly used the formula for the 5 gallon bucket calculation when measuring the water.

SPRINKLER SYSTEM DISCHARGE

NOZZLE DISCHARGE - GALLONS PER MINUTE							
psi	3/32	1/8	9/64	5/32	11/64	3/16	13/64
20	1.17	2.09	2.65	3.26	3.92	4.69	5.51
25	1.31	2.34	2.96	3.64	4.38	5.25	6.16
30	1.44	2.56	3.26	4.01	4.83	5.75	6.80
35	1.55	2.77	3.50	4.31	5.18	6.21	7.30
40	1.66	2.96	3.74	4.61	5.54	6.64	7.80
45	1.76	3.13	3.99	4.91	5.91	7.03	8.30
50	1.85	3.30	4.18	5.15	6.19	7.41	8.71
55	1.94	3.46	4.37	5.39	6.48	7.77	9.12
60	2.03	3.62	4.50	5.65	6.80	8.12	9.56
65	2.11	3.77	4.76	5.87	7.06	8.45	9.92
70	2.19	3.91	4.96	6.10	7.34	8.78	10.32
75	2.27	4.05	5.12	6.30	7.58	9.08	10.66
80	2.35	4.18	5.29	6.52	7.84	9.39	11.02
85	2.42	4.31	5.45	6.71	8.07	9.67	11.35
90	2.49	4.43	5.61	6.91	8.31	9.95	11.69
95	2.56	4.56	5.76	7.09	8.53	10.20	11.99
100	2.63	4.67	5.91	7.29	8.76	10.50	12.32

AVERAGE APPLICATION RATE - INCHES PER HOUR

Spacing in Feet	Discharge From Each Sprinkler						
	2 gpm	3 gpm	4 gpm	5 gpm	6 gpm	7 gpm	8 gpm
20x20	0.48	0.72	0.96	1.20	1.44	1.70	1.95
20x30	0.32	0.48	0.64	0.80	0.96	1.12	1.28
20x40	0.24	0.36	0.48	0.60	0.72	0.84	0.96
30x30	0.21	0.32	0.43	0.54	0.64	0.75	0.88
30x40	0.16	0.24	0.32	0.40	0.48	0.56	0.64
30x50	0.13	0.19	0.25	0.32	0.38	0.45	0.51
40x40	0.12	0.18	0.24	0.30	0.36	0.42	0.48
40x50	0.1	0.14	0.19	0.24	0.29	0.34	0.38
40x60		0.12	0.12	0.20	0.24	0.28	0.32



L20VH

1/2" 13mm Full Circle, Brass, Wedge Drive Impact Sprinkler

Bearing: 1/2" Male NPT, Brass
Trajectory Angle: 10°
Operating Range: 25-50 psi 1.7-3.5 bars
Flow Rate: 0.56-2.45 GPM 0.13-0.56 m³/h
Radius: 23-32 ft. 7.2-9.6 meters
One 1/8" Female NPT Nozzle Port

Features

- Patented, self-flushing wedge drive
- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- Two-year warranty

Benefits

- Wedge drive runs on smaller nozzles and lower pressures
- Self-flushing design reduces wear from grit
- Corrosion and grit resistant
- Built to last

U.S. STANDARD DATA | METRIC DATA

PERFORMANCE DATA

L20VH

STRAIGHT BORE NOZZLE (SBN-1)*

(Stream Height: 2.5 ft.)

PSI @ Nozzle	NOZZLE SIZE U.S. STANDARD									
	1/16"		51 drill		5/64"		3/32"		7/64"	
25	23	0.56	24	0.65	25	0.88	26	1.27	27	1.73
30	24	0.62	25	0.71	26	0.97	27	1.39	28	1.90
35	25	0.66	26	0.77	27	1.05	28	1.50	29	2.05
40	25	0.72	26	0.83	27	1.12	29	1.61	30	2.19
45	26	0.75	27	0.87	28	1.19	30	1.71	31	2.32
50	27	0.80	28	0.92	29	1.25	31	1.80	32	2.45

STRAIGHT BORE NOZZLE (SBN-1)*

(Stream Height: 0.8m)

BARS @ NOZZLE	NOZZLE SIZE METRIC														
	1.59 mm (1/16")			1.7 mm (51 drill)			1.98 mm (5/64")			2.38 mm (3/32")			2.78 mm (7/64")		
	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow
	(m)	(lps)	(m ³ /h)	(m)	(lps)	(m ³ /h)	(m)	(lps)	(m ³ /h)	(m)	(lps)	(m ³ /h)	(m)	(lps)	(m ³ /h)
1.7	7.2	0.04	0.13	7.3	0.04	0.15	7.6	0.06	0.20	8.1	0.08	0.29	8.2	0.11	0.39
2.0	7.3	0.04	0.14	7.6	0.04	0.16	7.9	0.06	0.22	8.3	0.09	0.31	8.5	0.12	0.42
2.5	7.7	0.04	0.15	7.9	0.05	0.17	8.3	0.07	0.24	8.8	0.10	0.35	8.9	0.13	0.47
3.0	8.0	0.05	0.17	8.2	0.05	0.20	8.6	0.07	0.27	9.1	0.11	0.38	9.4	0.14	0.52
3.5	8.2	0.05	0.18	8.5	0.06	0.21	8.8	0.08	0.28	9.4	0.11	0.41	9.6	0.15	0.56

* Nozzles must be purchased separately.
See Chart below.

Part Numbers and Ordering Information

Sprinkler Only	
Sprinkler without Nozzle	A06240

Nozzle Only			XX = Nozzle Size						
U.S. Standard			1/16"	51 DRILL	5/64"	3/32"	7/64"	1/8"	
Metric			1.59 mm	1.70mm	1.98 mm	2.38 mm	2.78 mm	3.18 mm	
Brass Straight Bore Nozzle	SBN-1	105780-XX	04	51	05	06	07	—	

Bold nozzle size numbers denote the most common nozzle choices.

Weatherbase

Browse ▾ Features ▾

enter a city, state, county, country or ZIP

Set Units

F C



KAMIAH, IDAHO

Home > North America > United States > Idaho

Elevation: 1194 feet Latitude: 46 13N Longitude: 116 01W



WEATHER

- Monthly - Summary
- Nearby
- Forecast
- Monthly - All Data
- Climate Summary
- Daily Averages
- Hourly Data

CURRENT CONDITIONS

As of 23 May, 2017 @ 10:52 am PDT
(67 Minutes Ago)

SHARE



N/A

Temperature
73.4°FHumidity
35.7 %Wind
N/ASunrise/Set
05:01 am
08:20 pmVisibility
N/ADew Point
44.6 °FPressure
29.94 in hgLocal Time
11:58 am PDT
23 May, 2017

PRINT THIS DATA



MONTHLY - ALL WEATHER AVERAGES [Show Summary]

101 F

TEMPERATURE

Average Temperature

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	50.9	32.8	37.8	43.2	49.5	57.3	64	73.8	71	63.3	49.6	38.7	30.2

Average High Temperature

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	64.2	39.1	48	55.4	64.5	73.1	79.9	93.7	91.5	80.9	62.7	45.7	35.8

Average Low Temperature

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	37.8	26.4	27.5	31	35.6	41.5	48.7	53.8	51.3	45.6	36.4	31.7	24.7

Highest Recorded Temperature

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	110	59	66	81	86	98	104	107	110	103	89	72	58

Lowest Recorded Temperature

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	-5	-5	2	10	22	27	32	38	36	26	12	4	-3

Average Number of Days Above 100F/38C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	6.8	—	—	—	—	—	0.2	2.6	3.5	0.5	—	—	—

Average Number of Days Above 90F/32C

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	56.5	—	—	—	—	1.8	4.3	23.8	20.1	6.4	—	—	—

Average Number of Days Above 80F/26C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	98.2	—	—	0.1	1.5	6.8	16.3	28.4	28.4	15.3	1.4	—	—

Average Number of Days Above 70F/21C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	—	—	—	—	—	—	—	—	—	—	—	—	—

A vertical advertisement for Fred Meyer. It features the Fred Meyer logo at the top, followed by the text "What's on your list today?". Below this is an image of a carton of Simple Truth Cage-Free Brown Eggs. The price "\$3.99" is prominently displayed. Underneath the price, it says "18 ct Simple Truth Cage-Free Brown Eggs". At the bottom, there is a "Valid until May 27" banner and a "View Weekly Ad" button.

Days	149.2	—	—	1.3	8.8	18.9	26.5	30.7	30.6	25.4	6.9	—	—
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Average Number of Days Above 60F/15C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	197.7	—	0.6	9.4	19.9	28.1	29.9	31	31	29.4	18	0.6	—

Average Number of Days Above 50F/10C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	249.4	1.2	7.2	23.2	28.8	30.9	30	31	31	30	28.7	6.5	0.8

Average Number of Days Above 40F/4C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	310.8	12.4	23.3	30.2	30	31	30	31	31	30	30.9	22	8.9

Average Number of Days Below 70F/21C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	364.7	31	28	31	30	31	30	30.7	31	29.9	31	30	31

Average Number of Days Below 60F/15C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	356.8	31	28	31	30	30.8	29.2	27.2	28.6	29	31	30	31

Average Number of Days Below 50F/10C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	298.2	31	28	31	29.9	28.1	17	8.3	11.6	22.6	30	29.8	31

Average Number of Days Below 40F/4C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	211.4	31	27.8	28.2	22	12.1	2.3	0.2	0.5	8.6	21	26.8	31

Average Number of Days Below 32F/0C

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	133.1	24.8	21.3	18.2	10.8	5	—	—	—	0.8	9.7	17	25.4

Average Number of Days Below 20F/-6C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	20.8	4.6	5	0.8	—	—	—	—	—	—	0.5	2.4	7.6

Average Number of Days Below 10F/-12C

Years on Record: 30

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	4.7	1.8	0.2	—	—	—	—	—	—	—	—	0.1	2.5

Average Number of Days Below 0F/-17C

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	1	0.2	—	—	—	—	—	—	—	—	—	—	0.9

PRECIPITATION

Average Precipitation

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
in	22.7	2.1	1.6	2.1	2.4	2.5	2.3	0.8	0.9	1.4	1.9	2.4	2.1

Average Number of Days With Precipitation

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	116	12	10	12	12	11	10	4	5	6	9	13	12

Most Reported Precipitation in a Month

Years on Record: 98

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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Days Below Freezing
 MARCH = 18.2 days
 APRIL = 10.8 days.
 MAY = 5 days.

TOTAL = 34 days.

Temperature - Precipitation - Sunshine - Snowfall

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March ▼

Daily normals Kamiah - Idaho - march

Day	High (°F)	Low (°F)	Precip. month (inch)	Precip. year (inch)	Snow month (inch)	Snow year (inch)
1 mar	51	28.1	0.08	3.94	0	0
2 mar	51.3	28.4	0.16	4.02	0	0
3 mar	51.7	28.6	0.24	4.09	0	0
4 mar	52	28.8	0.28	4.17	0	0
5 mar	52.3	29.1	0.35	4.25	0	0
6 mar	52.7	29.3	0.43	4.33	0	0
7 mar	53	29.6	0.51	4.41	0	0
8 mar	53.3	29.9	0.59	4.45	0	0
9 mar	53.6	30.2	0.67	4.53	0	0
10 mar	53.9	30.4	0.75	4.61	0	0
11 mar	54.2	30.7	0.83	4.69	0	0
12 mar	54.5	31	0.87	4.76	0	0
13 mar	54.8	31.3	0.94	4.84	0	0
14 mar	55.1	31.6	1.02	4.92	0	0
15 mar	55.4	31.8	1.14	5	0	0
16 mar	55.7	32.1	1.22	5.08	0	0
17 mar	56	32.4	1.3	5.16	0	0
18 mar	56.3	32.6	1.38	5.24	0	0
19 mar	56.6	32.9	1.46	5.35	0	0
20 mar	56.8	33.1	1.54	5.43	0	0
21 mar	57.1	33.3	1.61	5.51	0	0
22 mar	57.4	33.6	1.73	5.59	0	0
23 mar	57.7	33.8	1.81	5.67	0	0
24 mar	57.9	34	1.89	5.79	0	0
25 mar	58.2	34.2	2.01	5.87	0	0
26 mar	58.5	34.3	2.09	5.94	0	0
27 mar	58.7	34.5	2.17	6.06	0	0
28 mar	59	34.7	2.28	6.14	0	0
29 mar	59.3	34.8	2.36	6.26	0	0
30 mar	59.5	34.9	2.44	6.34	0	0
31 mar	59.8	35.1	2.56	6.46	0	0

Average weather Kamiah, ID - march

Average high temperature:	55.6°F
Average low temperature:	31.8°F
Average temperature:	43.7°F
Average Precipitation:	2.56 inch
Average snowfall:	0 inch
Highest av. max temperature:	59.8°F
Lowest av. max temperature:	51°F
Highest av. min temperature:	35.1°F
Lowest av. min temperature:	28.1°F

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April

Daily normals Kamiah - Idaho - april

Day	High (°F)	Low (°F)	Precip. month (inch)	Precip. year (inch)	Snow month (inch)	Snow year (inch)
1 apr	60.1	35.2	0.08	6.54	0	0
2 apr	60.3	35.3	0.2	6.61	0	0
3 apr	60.6	35.4	0.28	6.69	0	0
4 apr	60.9	35.4	0.35	6.77	0	0
5 apr	61.2	35.5	0.43	6.85	0	0
6 apr	61.5	35.6	0.51	6.97	0	0
7 apr	61.7	35.7	0.59	7.05	0	0
8 apr	62	35.7	0.67	7.13	0	0
9 apr	62.3	35.8	0.75	7.2	0	0
10 apr	62.6	35.8	0.87	7.28	0	0
11 apr	62.9	35.9	0.94	7.36	0	0
12 apr	63.2	35.9	1.02	7.48	0	0
13 apr	63.5	35.9	1.1	7.56	0	0
14 apr	63.8	36	1.18	7.64	0	0
15 apr	64.1	36	1.3	7.72	0	0
16 apr	64.4	36.1	1.38	7.83	0	0
17 apr	64.7	36.2	1.46	7.91	0	0
18 apr	65	36.2	1.57	7.99	0	0
19 apr	65.3	36.3	1.65	8.07	0	0
20 apr	65.6	36.4	1.73	8.19	0	0
21 apr	65.9	36.4	1.81	8.27	0	0
22 apr	66.3	36.5	1.93	8.35	0	0
23 apr	66.6	36.6	2.01	8.43	0	0
24 apr	66.9	36.8	2.09	8.5	0	0
25 apr	67.2	36.9	2.17	8.58	0	0
26 apr	67.5	37	2.24	8.66	0	0
27 apr	67.8	37.2	2.32	8.78	0	0
28 apr	68.1	37.3	2.4	8.86	0	0
29 apr	68.4	37.5	2.48	8.94	0	0
30 apr	68.7	37.7	2.56	9.02	0	0

Average weather Kamiah, ID - april

Average high temperature:	64.2°F
Average low temperature:	36.1°F
Average temperature:	50.2°F
Average Precipitation:	2.56 inch
Average snowfall:	0 inch
Highest av. max temperature:	68.7°F
Lowest av. max temperature:	60.1°F
Highest av. min temperature:	37.7°F
Lowest av. min temperature:	35.2°F

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May

Daily normals Kamiah - Idaho - may

Day	High (°F)	Low (°F)	Precip. month (inch)	Precip. year (inch)	Snow month (inch)	Snow year (inch)
1 may	69	37.9	0.08	9.09	0	0
2 may	69.3	38.1	0.16	9.17	0	0
3 may	69.6	38.3	0.24	9.25	0	0
4 may	69.9	38.5	0.35	9.33	0	0
5 may	70.2	38.7	0.43	9.45	0	0
6 may	70.5	39	0.51	9.53	0	0
7 may	70.7	39.2	0.63	9.61	0	0
8 may	71	39.5	0.71	9.72	0	0
9 may	71.3	39.8	0.79	9.8	0	0
10 may	71.6	40	0.91	9.88	0	0
11 may	71.8	40.3	0.98	9.96	0	0
12 may	72.1	40.6	1.06	10.08	0	0
13 may	72.3	40.9	1.14	10.16	0	0
14 may	72.6	41.2	1.26	10.24	0	0
15 may	72.8	41.5	1.34	10.35	0	0
16 may	73	41.8	1.46	10.43	0	0
17 may	73.3	42.1	1.54	10.55	0	0
18 may	73.5	42.4	1.65	10.63	0	0
19 may	73.7	42.7	1.73	10.75	0	0
20 may	73.9	42.9	1.85	10.83	0	0
21 may	74.2	43.2	1.93	10.94	0	0
22 may	74.4	43.5	2.05	11.02	0	0
23 may	74.6	43.8	2.13	11.14	0	0
24 may	74.8	44.1	2.24	11.26	0	0
25 may	75	44.4	2.36	11.34	0	0
26 may	75.2	44.6	2.44	11.46	0	0
27 may	75.5	44.9	2.56	11.57	0	0
28 may	75.7	45.2	2.68	11.69	0	0
29 may	75.9	45.4	2.8	11.81	0	0
30 may	76.1	45.7	2.91	11.93	0	0
31 may	76.3	45.9	3.03	12.01	0	0

Average weather Kamiah, ID - may

Average high temperature:	72.9°F
Average low temperature:	41.7°F
Average temperature:	57.3°F
Average Precipitation:	3.03 inch
Average snowfall:	0 inch
Highest av. max temperature:	76.3°F
Lowest av. max temperature:	69°F
Highest av. min temperature:	45.9°F
Lowest av. min temperature:	37.9°F

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