

MEMORANDUM

Date: September 03, 2009
To: Water Right File 95-9244
From: cpadilla
Re: Permit Review

Protest

An agreement was reached between the protestants and the applicant that eliminated the protests.

NKWD System

Currently there are 4 licenses that provide water to NKWD totaling 0.99 cfs and 5 permits totaling 13.49 cfs. The permits and licenses provide a total of 14.48 cfs. Once this right is permitted that will give NKWD a total of 16.48 cfs. To insure that this permit will actually be adding an additional increment of use to the NKWD water rights portfolio I analyzed the attached "use summary and capacity requirement table" submitted by NKWD. I found the following estimates:

- 2005 peak instantaneous flow was 12.1 cfs
- 2006 projected peak instantaneous flow was 15.2 cfs
- Projected peak instantaneous flow at platted lot build-out (additional 1228 lots) is 19.91 cfs

Given this information it looks as if NKWD does need the additional amount of water to meet current and near future demands. Note that there are other water rights that contribute to the NKWD's system that are not in their name (see attached list of water rights as of 2004). To verify that the additional increment is put to beneficial use, a condition will be added to the permit that will require them to report pertinent data.

PDs

I spoke with Mike Galante of NKWD on 9/2/09 and he informed me that this application intended to add another PD in the NESE of Sec 23 51N 4W. Currently there are two wells in that QQ known as Hayden Hills and Hayden Pines. The third PD will be known as Hayden Hills #2. The advertisement for this application did not include 3 PDs in the NESE instead it only listed two PDs. This will not prohibit the application from being approved nor will it need to be re-advertised since the advertisement listed PDs in the NESE of Sec 23.

Large POU

The permit will be given a large POU. The POU boundary for this permit was submitted in 2004 and since then the water district has submitted updated POU information in regard to a different permit, 95-9217. I used the up-to-date POU boundary found within that file for this permit's shape.



North Kootenai Water District Water Use Summary and Capacity Requirements

Updated March 16, 2006

EQUIVALENT RESIDENTIAL USE DATA	CURRENT			PROJECTED AT CURRENT PLATTED LOT BUILDOUT Additional 1228 Lots		PENDING COMMITMENTS (additional 420 lots)	
	2005	August, 2005 (Peak Month)	Est. 2006 Peak Month (Based on 2003 Dry Year)	Est. Annual	Est. Peak Month (Dry Year)	Annual	Est. Peak Month (Dry Year)
Total Water Use	601,933,201	109,983,800	138,100,050	810,798,409	180,907,650	882,234,392	212,785,650
Honeysuckle Hills Homeowners	(9,904,900)	(1,235,900)	(1,296,403)	(13,341,808)	(1,698,256)	(14,517,298)	(1,997,508)
Industrial Connections	(28,012,800)	(2,781,500)	(2,917,667)	(37,732,980)	(3,822,071)	(41,057,472)	(4,495,564)
Parks & Commercial Irrigation	(23,821,000)	(7,612,600)	(7,985,481)	(32,086,665)	(10,460,782)	(34,913,684)	(12,304,092)
Commercial Connections	(33,102,600)	(5,028,200)	(5,274,353)	(44,588,894)	(6,909,272)	(48,517,430)	(8,126,765)
Vertical Shaft Turbine Lube Meters	(12,814,500)	(1,195,700)	(1,195,700)	(12,814,500)	(1,566,337)	(18,781,806)	(1,842,344)
Total Residential Use	494,277,401	92,129,700	119,430,447	670,233,562	156,450,931	724,446,702	184,019,377
Residential ER's	3,539	3539	3639	4,767	4,767	5,187	5,607
Measured Average Day Demand (ADD) (Yearly use/365 days) gal/ER	363			385		383	
WestDOH Water System Design Manual ADD Design Value (Eqn 5-3) gal/ER	507			507		507	
Measured Peak Month ADD (Aug. Use/ 31 days) gal/ER		840	1,059		1,059		1,059
Estimated Maximum Day Demand (= 1.05 x Peak Month ADD) gal/ER		882	1,112		1,112		1,112
WestDOH Water System Design Manual MDD Design Value (2xADD) gal/ER		1,014	1,014		1,014		1,014
SYSTEM CAPACITY REQUIREMENTS - Based on Total Water Use							
Estimated Peak Hour Demand (=1.45 x MDD Aug Use/31/1440) gpm		3,573	4,486		5,876		6,912
Estimated Peak Instantaneous (=2.1 x MDD Aug Use/31/1440) gpm		5,433	6,821		8,936		10,511
Current IDWR Authorized Diversion Capacity GPM (15.41 cfs = 6900 gpm)		6,900	6,900		6,900		6,900
Surplus (Deficit) gpm		1,467	79		(2,036)		(3,611)
Surplus (Deficit) cfs		3.28	0.18		(4.54)		(8.06)

Notes:

1. Peak Hour Demand (PHD) peaking factor is estimated at 1.45 based on America Water Works Association Manual M32 "Distribution Network Analysis"
2. Peak Instantaneous Factor is based on the average of physical observations of the Rimrock and Hillside Systems Correlating Maximum Day Demand to Peak Instantaneous Demand
3. Estimated 2006 Peak Month (Dry Year) is based on 2003 Aug water usage (115,368,000 gal), which was the peak water usage in the past five years (2000 to 2005). The total use was scaled up to reflect the current number of ER's. An additional 100 connections are projected for 2006. The commercial use is also increased to reflect increased usage during a dry year. No additional commercial connections are included in projected values.
4. Non-Residential water usage is estimated to increase at the same rate as the Residential usage.

North Kootenai Water District
Applications for New Water Rights

Table 4:
Other Water Rights Associated with North Kootenai Water District

Action	1. Right Number	Priority	Amount (cfs/ac-ft)	Nature of Use	Period	Of	Use
Transfer	95-7827	3/29/1978	0.2	Municipal	1-Jan	to	31-Dec
Transfer ¹	95-7107	4/28/1970	1.31	Municipal	1-Jan	to	31-Dec
Transfer	95-8522	8/20/1986	0.61	Municipal	1-Jan	to	31-Dec
Transfer ²	95-4027	9/1/1963	1.2	Municipal	1-Jan	to	31-Dec
Transfer	95-7713	3/30/1977	0.04	Municipal	1-Jan	to	31-Dec
Transfer	95-7138	3/25/1971	0.14	Municipal	1-Jan	to	31-Dec
Amendment	95-8639	1/5/1990	1	Municipal	1-Jan	to	31-Dec

1. This water right could not be transferred. This water right is for a different point of diversion. Thus this application for new water right will cover this diversion.

2. This water right could not be transferred. This water right is a claim, proof of beneficial use prior to March 1963 could not be provided. Thus this application for new water right will cover this diversion.