

IDWR BENEFICIAL USE FIELD REPORT

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 95-8639, 95-9199, 95-9217

1. Owner: North Kootenai Water District Phone No. 208-772-3619

Current Address: P.O. Box 2290, Hayden, ID 83835

2. Accompanied by: See Attachment 1 EXAM DATE:

Address: _____ Phone No _____

Relationship to Permit Holder: See Attachment 1

3. Source: Groundwater: Rathdrum Prairie Aquifer tributary to N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: See Table 1 in Section E

2. Other water rights with the same point of diversion: See Table 1 in Section E

C. DIVERSION AND DELIVERY SYSTEM

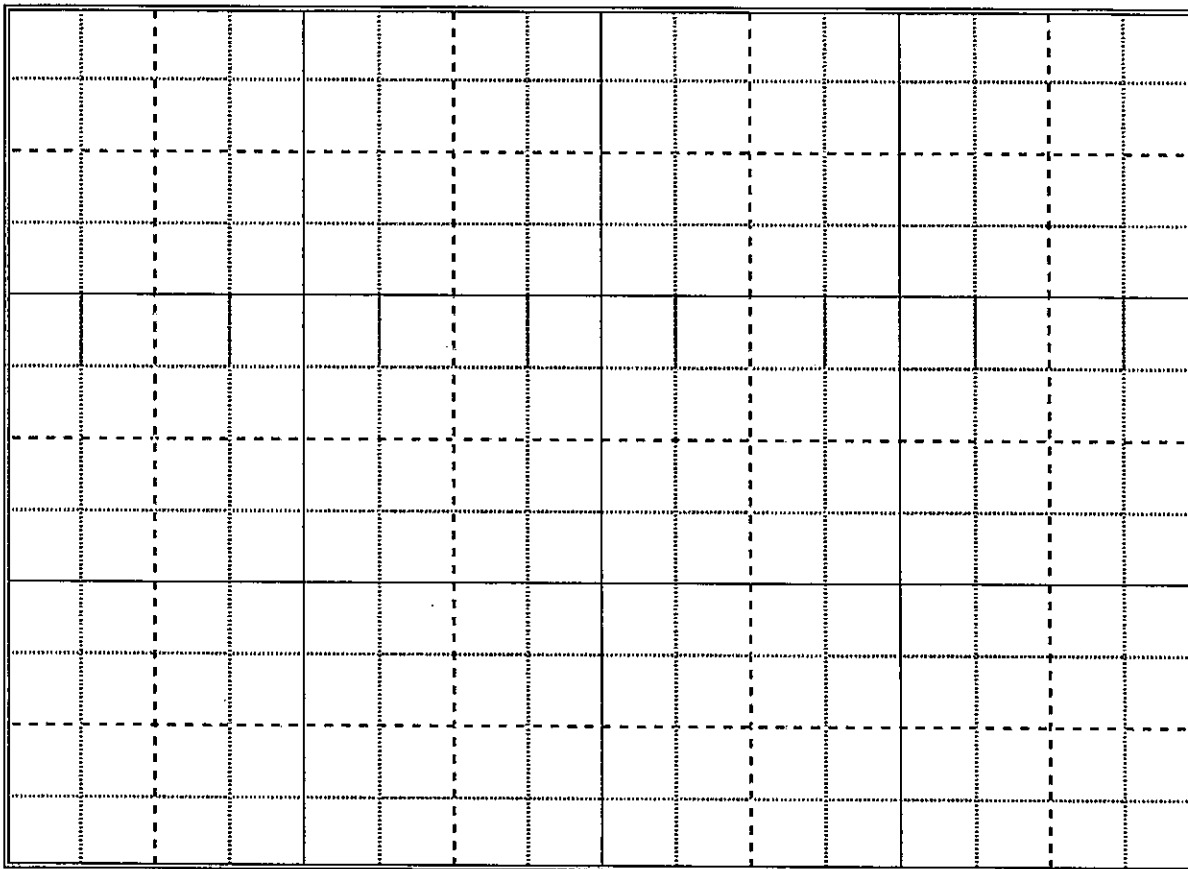
1. Point(s) of Diversion: See Attachment 2

[illegible]

2. Place(s) of Use: See Attachment 3: District Service Area Map Indicate Method of Determination

[illegible]

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable. Refer to attached system schematics



Scale: 1" = _____

____ Copy of USGS Quadrange Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

____ Aerial Photo Attached (required for irrigation of 10+ acres)

___X___ Photo of Diversion and System Attached

4. See Attachment 4

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1. See Attachment 5

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2.

Measurements:

E. Narrative/Remarks/Comments

Background

North Kootenai Water District is a quasi-municipal governmental agency. The District owns and operates 16 public water systems within Kootenai County. Two of these water systems are fed by surface water sources and the remainder are fed by groundwater (the Rathdrum Prairie Aquifer).

Current Water Right Licenses Specified for NKWD Service Area

Water Right License	Beneficial Use	Diversion (cfs)	AFA
95-7138	Municipal	0.14	60.6
95-7713	Municipal	0.04	29
95-7827	Municipal	0.2	55.2
95-8522	Municipal	0.61	441.6
Total		0.99	586.4

Recommended Amendments

The recommended changes to the points of diversion can generally be summarized as follows:

1. Removal of the following points of diversion:
 - a. Ohio Match 2 (permit 95-9217 only): No pump in well
2. Addition of the following points of diversion to all three permits:
 - a. Ranch Valley (EO#009217)
 - b. Sylte (EO#009200)
3. Amendment to legal description of the following points of diversion on all permits based on GPS data (the recommended legal description is shown in Attachment 2):
 - a. GTE 1 (EO#009196)
 - b. Chilco 1 (EO#005189)
 - c. Echo Beach (EO#005192)

Attachment 2 is a list of all the points of diversion that we recommend be included in the licenses. The above amendments and additions have been made within this attachment.

Examinations

The water right examinations for the points of diversion associated with Permit Numbers 95-8639, 95-9199, and 95-9217 were completed in 2008 and 2009. All but one of the District's points of diversion has a permanent flowmeter¹. The District reads these meters on a weekly basis to track production.

¹ The Echo Beach well does not have a permanent flow meter. This well pumps into an underground storage tank. Water is then boosted from the underground storage tank to the system. A permanent flowmeter is located on the discharge of the booster pumps. The diversion capacity of the well was tested by isolating the storage tank and calculating the volume of water used to fill the tank over a specified period of time.

The initial procedure for determining each point of diversion's capacity was to run the well for 5 to 10 minutes directly into the water system during "normal" conditions (average daily demand) and record the reading given by the flowmeter.

After further consideration, it was determined that in some cases this was not indicative of the source's required design capacity. In accordance with IDAPA 58.01.08 Section 501.17, a water system must have sufficient source capacity to supply the maximum daily demand plus fire suppression needs. This requirement is directly applicable to the following water systems:

- Hillside
- Twin Lakes
- Rimrock

Thus, tests on these systems were rerun with a fire hydrant open. The flowmeter for each source was again monitored for 5 to 10 minutes (until stabilization occurred) and then recorded. The results of these examinations are reported in Attachment 5 of this Examination report.

Examinations for the following points of diversion listed were not completed for the following reasons:

1. Ranch Valley (EO#009217): Previously examined and licensed. (License 95-7231). The capacity shown in Attachment 5 was taken from the license.
2. East Seasons Acres (EO#009103): Full beneficial use has not yet been completed of this permitted right. The capacity shown in Attachment 5 is the rated capacity of the pump.
3. Sylte Well (EO#009200): There is no meter on this well and we were unable to get an accurate pitot reading by isolating the well and flowing a fire hydrant. The capacity shown in Attachment 5 is the rated capacity of the pump.
4. Hayden Well #1 (EO#005169): Previously examined and licensed. (License 95-7763). The capacity shown in Attachment 5 was taken from the license.
5. Ohio Match #2: No pump. This point of diversion will be removed.
6. Hayden Well #2: No pump. This point of diversion will not be included.
7. Lancaster Well #2: This source is currently unusable as the pump has seized. The capacity shown in Attachment 5 is that which the pump was previously capable of producing.

Have conditions of permit approval been met?

Yes, the conditions of these permits have been met:

1. Suitable measuring devices have been installed on all points of diversion associated with the permits.
2. The District is conforming with the current Rathdrum Prairie Groundwater Management Plan.

F. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: See Attachment 6

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$

2. Volume Calculations for Other Uses: N/A

H. RECOMMENDATIONS Based on the diversion capacity (see Attachment 5) we recommend that each license be for the diversion amount listed

1. Recommended Amounts below.

Beneficial Use - Municipal	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Permit 95-9199	01/01	12/31	8.83 cfs	
Permit 95-8639	01/01	12/31	1 cfs	376
Permit 95-9217	01/01	12/31	2.51 cfs	

Totals: 12.34 cfs

2. Recommended Amendments: Refer to Section E

☒ Change P.D. as reflected above ☒ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Necia Maiani Date 5/13/09

Reviewer _____ Date _____

SEAL



Examiner 10-139

ATTACHMENT 1

Attachment 1

System	Well	Identification Number	Exam Date	Accompanied By	Relationship to Permit Holder
Ohio Match	Ohio Match 1		5/22/2008	Brad O'Connell	Employee
Hillside	Finucane		2/12/2009	Jared Felton	Employee
GTE/Hayden Pines	Hayden Pines		2/12/2009	Jared Felton	Employee
	GTE 1		5/23/2008	Brad O'Connell	Employee
	GTE 2		2/12/2009	Jared Felton	Employee
Twin Lakes	Tree Farm 1		2/12/2009	Jared Felton	Employee
	Tree Farm 2		2/12/2009	Jared Felton	Employee
	Echo Beach		6/20/2008	Ricky Billman	Employee
Rimrock	Lancaster 1		2/12/2009	Jared Felton	Employee
	Lancaster 3		2/12/2009	Jared Felton	Employee
Hayden Orchards	Hayden Orchard		5/23/2008	Brad O'Connell	Employee
Chilco	Chilco 1		6/20/2008	Ricky Billman	Employee
	Chilco 2		6/20/2008	Ricky Billman	Employee
Atlas Acres	Atlas Acres		5/22/2008	Brad O'Connell	Employee
Mountain View	Elk Street		6/20/2008	Ricky Billman	Employee
	Echo Street		6/20/2008	Ricky Billman	Employee
Meadowland Acres	Meadowland Acres		5/23/2008	Brad O'Connell	Employee
Valley Green	Valley Green		2/12/2009	Jared Felton	Employee

ATTACHMENT 2

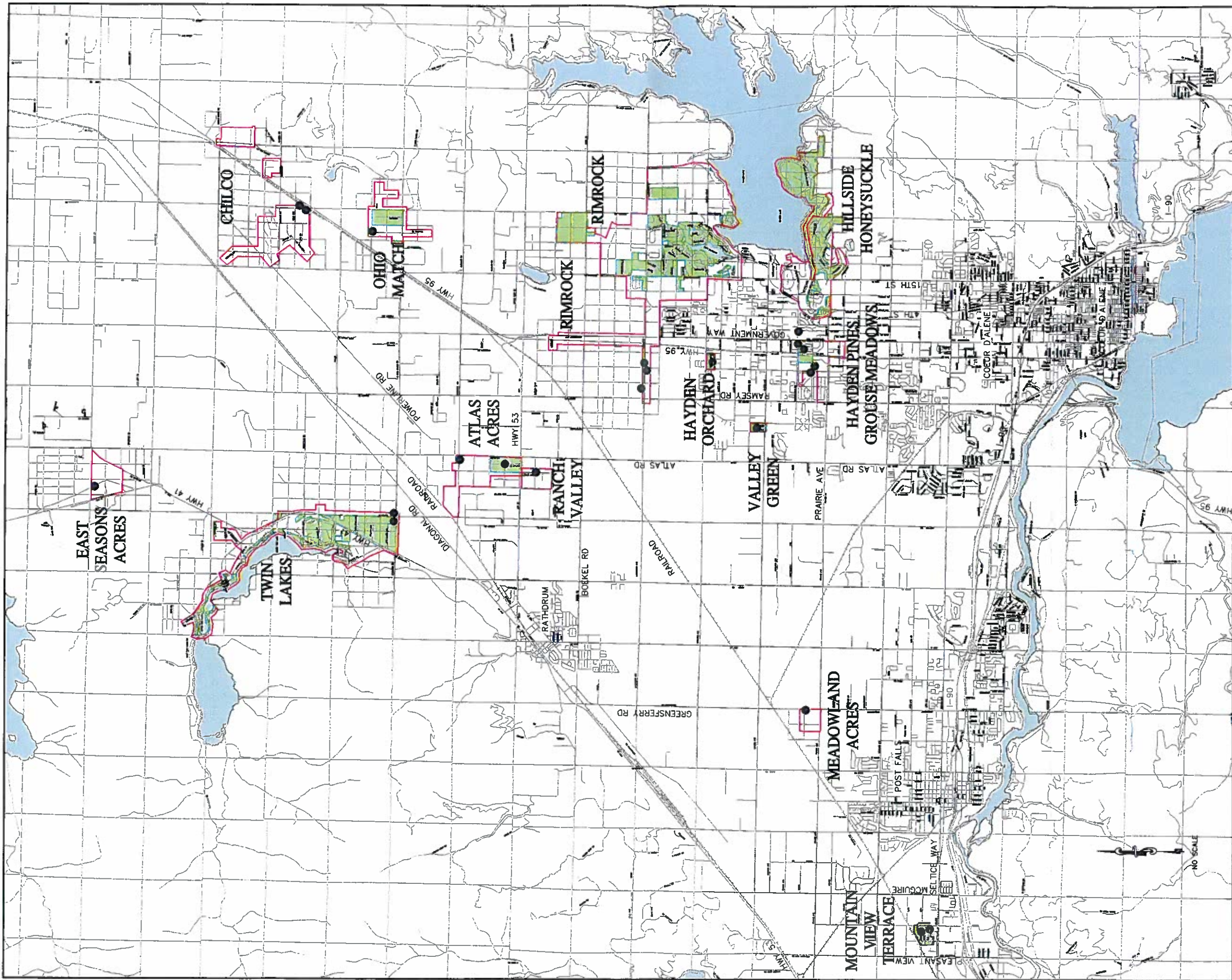
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Attachment 2: Points of Diversion											
System	PWS Number	Well	DEQ Identification Number	Well Drilling Permit Number	Latitude ¹	Longitude ¹	1/4 1/4	Section	Township	Range	County
Ohio Match	1280127	Ohio Match 1	EO #005184	#D0010243	47°51.183N	116°45.060W	NWSE	18	52N	03W	Kootenai
Hillside	1280095	Finucane	EO #005170		47°45.089N	116°47.021W	NWSW	24	51N	04W	Kootenai
		Hayden Well	EO #005169		47°45.077N	116°47.281W	NESE	23	51N	04W	Kootenai
GTE/Hayden Pines	1280257	Hayden Pines	EO #005168	#D0041569	47°45.008N	116°47.392W	NESE	23	51N	04W	Kootenai
		GTE 1	EO #009196		47°44.882N	116°47.836W	SWSE	23	51N	04W	Kootenai
		GTE 2	EO #005172		47°44.874N	116°47.805W	SWSE	23	51N	04W	Kootenai
Twin Lakes	1280099	Tree Farm 1	EO #005190		47°50.800N	116°51.082W	SESE	17	52N	04W	Kootenai
		Tree Farm 2	EO #005191	#D0051936	47°50.800N	116°51.055W	SESE	17	52N	04W	Kootenai
		Echo Beach	EO #005192		47°53.173N	116°52.533W	NENE Lt 1	6	52N	04W	Kootenai
Rimrock	1280009	Lancaster 1	EO #005154		47°47.256N	116°47.827W	NWNWNE	11	51N	04W	Kootenai
		Lancaster 2	EO #009193		47°47.269N	116°47.799W	NWNE	11	51N	04W	Kootenai
		Lancaster 3	EO #009199	#D0022244	47°47.320N	116°48.268W	SESWSW	2	51N	04W	Kootenai
Hayden Orchards	1280088	Hayden Orchard	EO #005171		47°46.308N	116°47.696W	NWNE	14	51N	04W	Kootenai
Chilco	1280048	Chilco 1	EO #005189		47°52.179N	116°44.591W	SWNW	8	52N	03W	Kootenai
		Chilco 2	EO #005186	#D0013463	47°52.182N	116°44.588W	SWNW	8	52N	03W	Kootenai
Atlas Acres	1280005	Atlas Acres	EO #005155		47°49.246N	116°49.910W	NESE	28	52N	04W	Kootenai
		Sylte Well	EO #009200	#D0028350	47°49.882N	116°49.834W	NENE	28	52N	04W	Kootenai
Mountain View	1280123	Elk Street	EO #005195		47°43.081N	116°59.531W	SESW	32	51N	05W	Kootenai
		Echo Street	EO #005194		47°43.201N	116°59.586W	NESW	32	51N	05W	Kootenai
Meadowland Acres	1280277	Meadowland Acres	EO #009114		47°44.897N	116°54.979W	SESE	23	51N	05W	Kootenai
Valley Green	1280195	Valley Green	EO #005166		47°45.657N	116°49.064W	SWSE Lt. 7	15	51N	04W	Kootenai
East Seasons Acres	1280278	East Seasons Acres	EO #009103		47°55.061N	116°50.530W	NENW	28	53N	04W	Kootenai
Ranch Valley	1280151	Ranch Valley	EO #009217		47°48.798N	116°50.069W	SENE	33	52N	04W	Kootenai

Notes:

1. Latitude and longitude were established using a handheld GPS unit. The estimated accuracy of this equipment is +/- 20 feet.

ATTACHMENT 3



WELCH-COMBER
1000-441-0282
www.welchcomber.com
PO Box 200-441-0444
Coeur d'Alene, ID 83815

NORTH KOOTENAI WATER DISTRICT SYSTEM OVERVIEW
SERVICE AREA AND POINTS OF DIVERSION
FOR PERMIT NO. 95-9217

* BASED ON DATA PROVIDED BY
NORTHIDA 02-10-2004
11280053.DWG, 04-24-2008

LEGEND:
● GROUND WATER
● WELL LOCATIONS
□ DISTRICT BOUNDARY
■ OVERSIZED LOTS AND PARCELS
■ WATER SERVICE AREA

■ GROUND WATER
■ WELL LOCATIONS
■ SURFACE WATER
■ INTAKE LOCATIONS

NO SCALE

ATTACHMENT 4

Attachment 4

System	Well	Identification Number	Additional Description	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size	Notes
Ohio Match	Ohio Match 1	EO #005184	Inside Well		5			1.5"	Submersible
Hillside	Finucane	EO #005170	Finucane	GE	75	PXJ329123		6"	Turbine
	Hayden Well 1	EO #005169		GE	200	5K6278XH34A	Peerless	236369	Turbine
GTE/ Hayden Pines	Hayden Pines	EO #005168			30				Submersible
	GTE 1	EO #009196	Outside Well	Franklin	50		Grundfos	475S500-5	Submersible
	GTE 2	EO #005172	Inside Well		30		Red Jacket		Submersible
Twin Lakes	Tree Farm 1	EO #005190	Inside Well	Franklin	25	01F19-28-0032		4"	Submersible
	Tree Farm 2	EO #005191	Outside Well	Franklin	30	336333963 00J19-19-0091	Grundfos	6"	Submersible
	Echo Beach	EO #005193		Franklin	30		Grundfos	mod. 230S300-9	Submersible
Rimrock	Lancaster 1	EO #005154		GE	200	GLJ723123	Worthington	VTP305405	Turbine
	Lancaster 2	EO #009193		Hitachi	75	G8938001H	Berkeley	7T75-450	Submersible
	Lancaster 3	EO #009199			200			12"	Submersible
Hayden Orchards	Hayden Orchard	EO #005171			15			3"	Submersible
Chilco	Chilco 1	EO #005189			15			4"	Submersible
	Chilco 2	EO #005186			10		Grundfos	230S100-3	Submersible
Atlas Acres	Atlas	EO #005155			10	4KNE0616	Red Jacket	2"	Submersible
	Sylte Well	EO #009200			30			3"	Submersible
Mountain View	Elk Street	EO #005195			7.5			R-8889-02-D-555	Turbine
	Echo Street	EO #005194		US Vertical	50	R8889-02-D-55 R2085810	Aurora Verti-Line	V74-01443	Turbine
Meadowland Acres	Meadowland Acres	EO #009114			7			3"	Submersible
Valley Green	Valley Green	EO #005166		Franklin	10		Jacuzzi	6" Ductile	Submersible
East Seasons	East Seasons	EO #009103						2"	Submersible
Ranch Valley	Ranch Valley	EO #009217						1.5"	Submersible

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ATTACHMENT 5

Attachment 5: Flow Measurements												
System	Well	Identification Number	Exam Date	Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date	Measured Flow Rate ⁴	
Ohio Match	Ohio Match 1	EO #005184	5/22/2008	Master Meter				2216149	1.5"	Unknown	0.16 cfs	70 gpm
Hillside	Finucane	EO #005170	2/12/2009	Rockwell				92557	3"	Unknown	0.98 cfs	440 gpm
	Hayden Well ¹	EO #005169	Licensed Under 95-7763 at 3 cfs								3 cfs ⁵	1347 gpm ⁵
GTE/Hayden Pines	Hayden Pines	EO #005168	2/12/2009	McCrometer				06-07860-04		Unknown	0.38 cfs	170 gpm
	GTE 1	EO #009196	5/23/2008	Rockwell Meter				34833	6"	Unknown	1.17 cfs	525 gpm
	GTE 2	EO #005172	2/12/2009	McCrometer				78-4-353	4"	Unknown	0.49 cfs	220 gpm
Twin Lakes	Tree Farm 1	EO #005190	2/12/2009	Siemens	Digital	Meg 140	5000	7ME652207402N038	4"	Unknown	0.36 cfs	160 gpm
	Tree Farm 2	EO #005191	2/12/2009	McCrometer				07-05206-07	6"	Unknown	1 cfs	450 gpm
	Echo Beach	EO #005193	6/20/2008	Drawdown in tank						Unknown	0.49 cfs	222 gpm
Rimrock	Lancaster 1	EO #005154	2/12/2009	McCrometer			F7000	E06-00289	10"	Unknown	2.45 cfs	1100 gpm
	Lancaster 2	EO #009193									0.83 cfs ⁶	372 gpm ⁶
	Lancaster 3	EO #009199	2/12/2009	Master Meter	Class II			8040444	8"	Unknown	2.30 cfs	1034 gpm
Hayden Orchards	Hayden Orchard	EO #005171	5/23/2008	Precision	Invensys			60039485	2"	Unknown	0.18 cfs	80 gpm
Chilco	Chilco 1	EO #005189	6/20/2008	Badger Meter				62759-004	4"	Unknown	0.78 cfs	350 gpm
	Chilco 2	EO #005186	6/20/2008	Master Meter				6171067	4"	Unknown	0.56 cfs	250 gpm
Atlas Acres	Atlas Acres	EO #005155	5/22/2008	McCrometer					2"	Unknown	0.18 cfs	80 gpm
	Sylte Well ²	EO #009200	Not Tested, No Meter, Separate Permit 95-9129								0.53 cfs ⁶	239 gpm ⁶
Mountain View	Elk Street	EO #005195	6/20/2008	Rockwell				1328456	3"	Unknown	0.21 cfs	95 gpm
	Echo Street ²	EO #005194	6/20/2008	Master Meter				97233	4"	Unknown	.96 cfs	430 gpm
Meadowland Acres	Meadowland Acres	EO #009114	5/23/2008	Kent Meter		T3000		96420028	3"	Unknown	0.53 cfs	240 gpm
Valley Green	Valley Green	EO #005166	2/12/2009	Precision	Steel	PMM		94564977	2"	Unknown	0.16 cfs	70 gpm
East Seasons Acres	East Seasons Acres	EO #009103	Not Tested, Separate Permit 96-9134								0.05 cfs	24 gpm
Ranch Valley	Ranch Valley ³	EO #009217	Licensed Under 95-7231 at 0.08 cfs								0.08 cfs ⁷	36 gpm ⁷

Notes:

1. The diversion capacity of Hayden Well is covered under Water Right 95-7763.
2. The flow measurement shown for Echo Street was taken on 11/24/2008.
3. The diversion capacity of Ranch Valley is covered under Water Right 95-7231.
4. For those wells that were not tested, the diversion capacity shown is based on either an existing license or the theoretical diversion, calculated in Attachment 6.
5. As shown on the 1980 Field Exam Report and license 95-7763.
6. Diversion capacity is based on the Theoretical Diversion as calculated in Attachment 6.
7. As shown on the Field Exam Report and license 95-7231.

Total Diversion Capacity (cfs): 17.83

ATTACHMENT 6

Attachment 6 Theoretical Diversion

Equation:

$$Q = HP \times 3956 \times \text{Eff.} / H$$

Well	Discharge to:	Special Design Condition	H = Design Discharge Head (Approximate) feet	Pump Horse Power (HP)	Assumed Pump Efficiency (Eff)	Discharge (Q) gpm
Ohio Match 1	Ground Storage		90	5	0.75	165
Finucane	System	Fire Flow	532	75	0.75	418
Hayden Well*	Not Tested					1,347
Hayden Pines	Ground Storage		267	30	0.75	333
GTE 1	Ground Storage		268	50	0.75	554
GTE 2	Ground Storage		268	30	0.75	332
Tree Farm 1	System	Fire Flow	528	25	0.75	140
Tree Farm 2	System	Fire Flow	528	30	0.75	169
Echo Beach	Ground Storage		315	30	0.75	283
Lancaster 1	System	Fire Flow	598	200	0.75	992
Lancaster 2	Unusable		598	75	0.75	372
Lancaster 3	System	Fire Flow	598	200	0.75	992
Hayden Orchard	Ground Storage		310	15	0.75	144
Chilco 1	Ground Storage		85	15	0.75	524
Chilco 2	Ground Storage		85	10	0.75	349
Atlas	Ground Storage		253	10	0.75	117
Sylte Well	Not Tested		373	30	0.75	239
Elk Street	Ground Storage		92	8	0.75	242
Echo Street	Ground Storage		92	50	0.75	1,613
Meadowland Acres	Ground Storage		300	7	0.75	69
Valley Green	Ground Storage		310	10	0.75	96
East Seasons Acres	Not Tested		618	5.00	0.75	24
Ranch Valley*	Not Tested					36
Total						9,548.96 gpm
						21.28 cfs

*These points of diversion were not tested as they have already been licensed. The amount licensed for diversion at each well has been entered as the Discharge.