

A25-02029 Summary

8/28/03

1) Ownership: correct

2) POB: See sketch on Spatial Dynamics layout w/ GPS readings of corners.

GPS1 SE corner waypoint 2029-1

GPS5 SW corner waypoint 2029-5

GPS3 NW corner waypoint 2029-3

GPS4 NE corner waypoint 2029-4

See field notes, spreadsheet for coordinates. Acreage is less than claimed.

3) POD: GPS 675,114 E 258,926 N

waypoint 2029-2. The POD is a developed spring in the bed of what is shown on the map as "Badger Creek" but there is no water in the creek above the POD. The domestic & irrigation pipe inlets are within 50' of each other, the GPS references the domestic. Probably recommending 2 PODs is appropriate.

4) Water use: Current use and license exam support also domestic & stockwater

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use. I propose inviting claimant to amend claim. Original domestic was for a home, now it is for a farm shop and family camping in the summer (used as recently as 2002). Stockwater is for range cattle, I forgot to ask numbers.

5) Forfeiture: Remarks on claim raise the issue of forfeiture. If forfeiture occurred, use has resumed on the marked POU & appears to have been in place for many years.

6) Quantity: Attached theoretical shows capacity ≈ 0.36 cfs. Likely acreage does not support this much. I propose adding reasonable Q for stock & domestic to irrigation recommendation.

7) Water Source: License & claim indicate "Badger Creek" but field inspection and original license exam indicate "Spring." I propose a source to "unnamed spring." Note USGS does not map or name spring.

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- 8) Priority: Because of current use of water / existence of license I propose licensed priority.
- 9) Photos: See field notes for descriptions.

Dylan A. Contor

A25-02029 Theoretical: Mannings

Per claimants, the irrigation water is conveyed through 8" concrete pipe 750' long w/ 5' of fall. When not in a drought pipe runs half full.

Mannings Equation:

$$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$$

$$Q = \text{cfs}$$

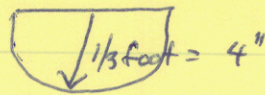
$$A = \text{cross sectional area, ft}^2$$

$$R = \text{mean hydraulic radius, ft.}$$
$$= \frac{\text{cross section}}{\text{wetted perimeter}}$$

$$S = \text{slope}$$

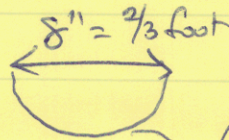
$$n = \text{friction coefficient.}$$

$$A = \frac{\pi r^2}{2}$$


$$\downarrow 1/3 \text{ foot} = 4''$$

$$= \frac{(\pi)(1/3)^2}{2} = 0.175 \text{ ft}^2$$

wetted perimeter


$$8'' = 2/3 \text{ foot}$$

$$= 0.67 \text{ ft} + 1.05 \text{ ft} = 1.72 \text{ ft.}$$
$$\left(\frac{8'' = 2/3 \text{ foot}}{2} \right) \pi = 1.05 \text{ ft}$$

Theoretical p 2

$$R = \frac{\text{Area}}{\text{wetted perimeter}} = \frac{0.175 \text{ ft}^2}{1.72 \text{ ft}} = 0.102 \text{ ft}$$

$$S = \frac{5 \text{ ft}}{750 \text{ ft}} = 0.0067$$

$$n = 0.013 \text{ for concrete pipe, Perry}$$

"Civil Engineering Handbook" 1959 p6-38

$$Q = \frac{1.486}{0.013} (0.175)(0.102)^{2/3} (0.0067)^{1/2}$$
$$= 0.36 \text{ cfs}$$

A25-02029 Field Notes 8/28/03

Photo 1, GPS 1, SE corner of pole.
note sprinkler pipe. GPS 2029-1

675,430 E 258962 N

Doyle Judy & Steve Grayson accompanied.

Photo 2, in place of use - green, old ditch,
sprinkler pipe

photo 3, cement pipe discharge
(new roll of film)
photo 4, cement pipe inlet

photo 5, old cement from Otteson spring box

photo 6, enclosure for domestic spring box

photo 7, domestic spring box detail

GPS 2 domestic spring box 2029-2
675,114 E 258,926 N

When spring box @ domestic 1st developed,
pipe wouldn't carry all the water

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photo 8 - water by passing cement pipe inlet

8" concrete pipe originally ran half full - 5 ft fall in 750 feet
(fall per claimant, distance ^{per owner} ~~passed~~)

Domestic use -

2 homes (no longer in use)

Family sometimes camp &

use water - most recently 2002

Farm shop, spray tanks, wash equip.

GPS 3 - NW corner of POU 2029-3

675,339 E 259031 N

GPS 4 NE corner of POU 2029-4

675,411 E, 259,053 N

photo 9 - House } in. pasture

photo 10 - hydrant @ shop.

There is also a cement trough for cattle use ~ 100' S. of NW POU per claimant

GPS 5 - 7 meters South of SW corner of POU

675,355 E 258,959 N

(connected to 258,966 N)

2029-5

675,355 E

Doyle Judy Contact log p2

8/20/03 Mr. Grayson called - appointment 8/20/03 8:30 AM.
Linden Road - roundabout - east $\approx$ 9 or 10 miles to
Y in road.

Apparently there has been a Δ in source to a
spring, Also some domestic use from the
spring.

Doyle, Judy contact log

8/19/03 523-9270 8:50 AM

Total knee replacement - Stede Grayson is
son in law ~~522-9370~~ 522-9307.
David Sanders - 313-0624 - other son-in-law -

8/19/03 Stede Grayson 522-9307 8:55 busy -

8/19/03 David Sanders 313-0624 8:55
cell phone - "out of area"

8/19/03 10:15 returned Mr. Judy's msg on
answering machine - explained
when I got data

Mr. Judy had developed a spring -
thinks this claim is for the spring -
Bonnerille County has a box for
collecting water for watering road -

8/19/03 Stede Grayson 7:18 PM
Msg w/ Mrs. Grayson