From:	Robin Silver
To:	Bill Radke
Subject:	[EXTERNAL] FW: SAN BERNADINO NWR HYDROLOGY STUDIES
Date:	Thursday, December 26, 2019 2:20:28 PM
Attachments:	report 19910000 Geohydrology and Chemical Quality of Ground Water LONGSWORTH_USGS.pdf report 19970000 Ground-water flow and Interaction with Surface Water_San Bernadino Valley DAVIS_MADDOCK_MAC NISH HWR-1997-030.pdf
Importance:	High

From: Robin Silver <rsilver@biologicaldiversity.org>
Sent: Thursday, December 26, 2019 2:03 PM
To: (b) (6), (b) (7)(C) ((b) (6), (b) (7)(C)) <(b) (6), (b) (7)(C) >
Subject: SAN BERNADINO NWR HYDROLOGY STUDIES
Importance: High

Mr. (b) (6), (b) (7)(C) .

Please secure water from outside of the San Bernadino Valley or we are going to have extirpations from the US of the Yaqui drainage fish (chub, catfish, and topminnow) from the NWR.

Please let us know that you all are willing to do so.

As we discussed, by the time lowering of the water levels are noted, just stopping of the pumping does not stop the damage as the cone of depression from the new well(s)' pumping captures water for many years.

Thank you. Robin Silver

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
PO Box 1178
Flagstaff, AZ 86002
Email: rsilver@biologicaldiversity.org
Phone: 602-799-3275
FAX: 928-222-0077
WEB: www.biologicaldiversity.org

From: Lester, Emily A CIV USARMY CESPL (USA)
To: Fernandez, Juliette
Cc: Joaquin Baca; (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); David Boyes; Nick; Bill Radke
Subject: [EXTERNAL] FW: Tucson 3 - SWVC-Well Readings
Date: Monday, December 16, 2019 5:21:39 PM
Attachments: Well Tracking.xlsx

Hello Juliette,

Please see attached for the Glen Ranch well meter information provided by the contractor and the USACE construction team. The Glen Ranch well is the private well leased by the contractor within proximity to the SBNWR on Tucson 3 Border Barrier project near Douglas. This is currently being reported on a monthly basis.

Please let me know if you and your team may have any updated monitoring information or new developments in the field which I may provide to the team.

Thank you for your time,

Emily

Emily Lester
NEPA Compliance Officer
Task Force Barrier
US Army Corps of Engineers
Emily.A.Lester@usace.army.mil

Tel: 602.230.6995 Office
Tel: 213.479.2132 Mobile

Building Strong!

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-----Original Message-----
From: Nelson, Jeremy M SFC USARMY (USA)
Sent: Monday, December 16, 2019 5:10 PM
To: Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil>
Subject: Tucson 3 - SWVC-Well Readings

Emily,

See attached I received from the KTR on the readings they have been recording by month. If you have any questions let me know.

V/R

Jeremy M. Nelson
Project Engineer/Sr ConRep

Task Force Barrier
Douglas, AZ
Cell - (b) (6)
Jeremy.M.Nelson@usace.army.mil

From: rod dossey
To: Harden, Tasha; (b) (6), (b) (7)(C)
Cc: Bill Radke; Emily.A.Lester@usace.army.mil
Subject: [EXTERNAL] Re: Black Draw field work
Date: Thursday, October 24, 2019 8:16:38 AM

Thank you for reaching out to us. Please give me a call when you are out of the field. (b) (6)

Get Outlook for iOS

From: Harden, Tasha <tasha_harden@fws.gov>
Sent: Thursday, October 24, 2019 6:55:30 AM
To: (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C)>; rod dossey <rod@bio-studies.com>
Cc: Bill Radke <bill_radke@fws.gov>; Emily.A.Lester@usace.army.mil <Emily.A.Lester@usace.army.mil>
Subject: Black Draw field work

Morning Paul and Rod,
I was asked to coordinate with you two on relocation areas for fish/frogs found in Black Draw. I will be out on refuge today with another group starting at 0900- I should be done with them after an hour or so. Please feel free to call/text my cell phone listed below if you would like to meet up today at Black Draw on the border during the late morning.

As for relocation areas on refuge for frogs/fish- we ask that you just leave any fish/frogs found in Black Draw. Any frogs will likely be bull frogs (invasive species) and there is a potential for mosquito fish to be found in that area (another invasive and easily confused with our endangered topminnow). We do not want to risk introducing mosquito fish to refuge ponds as the ponds are all currently clean and free of that species.
Hopefully we can meet up today, and if you have any further questions just let me know,
Thanks-

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From: (b) (6)
To: Radke, Bill
Subject: [EXTERNAL] Re: FWS Hydrology Report for SBNWR
Date: Wednesday, October 16, 2019 3:11:02 PM

The contractor called me today regarding the well...
I have been working cattle and we have not talked yet...will talk to them and let you know what they say.
On one hand, it would be good for that well to stay in production for them, because I promise you that they are going to drill as many wells as they need to to finish the project and they will all be on the Roosevelt easement.
Also, evidently, the USACE can come right to the refuge and sequester the wells there and pump them until they are dry.
I think that if the granite well stays in production it may be better than the alternative.
That was one reason we told them they could use the well...to keep the feds from coming into the refuge and using your wells.
Will let you know what they say.
K

On Wednesday, October 16, 2019, 12:10:14 PM MST, Radke, Bill <bill_radke@fws.gov> wrote:

(b) (6); The FWS remains concerned about water withdrawal from the "Granite Well" located on the Glenn Ranch and the potential impacts to the groundwater aquifer that supports the refuge. As a result, FWS Region-2 Hydrologists put together reports to accurately investigate the situation with the goal of producing an accurate risk assessment which would give us talking points for discussion with DHS. As this involves Glenn Ranch Corporation, I am providing those reports to you and (b) (6). Please call me if you have questions about the information. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Alan Finks
To: Radke, Bill
Subject: [EXTERNAL] Re: FWS Hydrology Report Regarding San Beranrdino NWR
Date: Wednesday, October 16, 2019 1:55:08 PM

Dear Bill,

Thanks for your letter.
I sent the request Saturday, but probably after the post office finished pickup, so it probably went out in Monday's mail and will probably arrive in Douglas either today or tomorrow.

Looking at the documents you sent, I am struck by a couple of things. In the October 7 memorandum from Ariel L MacMillan-Sanchez: On page 8 which begins "by border wall contractors..." it says that the DHS contractors are allowed to withdraw 300 gallons per minute or an estimated 80,000 gallons per day from the well.
When I multiply 300 gallons per minute by 60 minutes per hour by an 8 hour work day, I get 144,000 gallons. If I multiply by 24 hours, I get 432,000 gallons. I heard from another source that the new pump has a capacity of 400 gallons per minute. This is a lot more than 80,000 gallons.

Also on this document, according to ADWR, this well's depth is 220 feet. I wonder if this is correct. If it is, then we would have to drill no deeper than 220 feet (or until we hit water) in order to be safe.

By the estimates in the charts, It looks like a maximum estimated draw down at the snail spring of 13.7 feet. I'm going to round this to 15 feet at our spring house which is the Slaughter Ranch's water source. This is deeper than the current depth of the cavity at the spring house, so we definitely need to drill.

When last we spoke you cautioned me against publishing incomplete numbers from the reports you had received. Are these ones considered official?

Thank you and your staff for all your hard work.

Sincerely,

Alan Finks
Johnson Foundation

On Wed, Oct 16, 2019 at 12:14 PM Radke, Bill <bill_radke@fws.gov> wrote:

> Alan; The FWS remains concerned about water withdrawal from the "Granite Well" located on the Glenn Ranch and the potential impacts to the groundwater aquifer that supports the refuge and Slaughter Ranch. As a result, FWS Region-2 Hydrologists put together reports to accurately investigate the situation with the goal of producing an accurate risk assessment which would give us talking points for discussion with DHS. As this involves the FWS warranty deed on the Johnson Historical Museum of the Southwest property, I am providing those reports to you. As of yesterday, I had not received your letter regarding planned domestic well production at Slaughter Ranch, and I will respond once I receive it. Please call me if you have questions about the information attached. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: (b) (6)
To: flavomarginatus
Cc: Bill Radke; (b) (6); (b) (6); (b) (6); (b) (6)
Subject: [EXTERNAL] Re: Reporter
Date: Friday, November 8, 2019 9:35:27 AM

(b) (6)!
Thanks for the heads up. I am going to cc some of the MBG on this response, since it is all information that may affect future press trips.

USACE will monitor you on the Roosevelt easement and that is legitimate.
It is now a construction zone and the Army Corp is not allowing the public nor reporters, nor locals, especially during daylight hours.
They are not trying to be hard cases...they are liable and they are protective.

You may be challenged by USACE...be nice, amicable, understanding.

Another issue that is affecting the contractors is the shooting in Bavispe.
They have received some "warnings" of sorts and their crews are leary and some have quit.

We were down there with NBC on a human interest story and it took me one month to get the process and permission in place.
My time with them expired at dark yesterday.

I am not able to help you today...too much going on here regarding other issues.

You might be blessed by 2:00 and have the crews thinning for the weekend...but...they have been working through the weekends...not sure what Veterans Day will hold...
Unfortunately, ***you can not say you are with us (as a ranch),*** because I released our access commitment for press as of dark last night.

I am not bringing MBG into any of our conversations with anybody.
This is no longer about getting a wall or not getting one...there have been a lot of developments and ***a lot of conflict*** and we ((b) (6)) have managed to resolve most of the issues that have faced our ranch, land, water, etc.

Arizona Daily Star came last week and we had to stay north of the bridge in Silver Creek...
I changed their story this morning, because one of the issues we had last week with the County has been legally resolved and is old news and was resolved in a amicable way and I do not want any bad blood between the County and us because of the press.

If you are going to address the water use issue...you need to check with Bill Radke.
He and our family have a common ground and have a lot of metering and research going on and the issues two weeks ago that were volatile and on fire have resolved themselves and we are all moving forward with good relations and trust...

This is no longer an issue that can be addressed randomly... there are now processes that the local immediate "players" have agreed on and are working together on...the contractor, us, and the refuge.
DHS, USACE, BLM and State Land are all in the conversations that come up day to day.

So, not to rain on your parade and your reason for coming.
Just a heads up...the Roosevelt Easement is a place you will probably not be allowed for more than a few minutes until someone reports you.
You will also not be allowed on the construction area. They are very protective and ironically it is more from their concerns of what happened in Mexico!

Let me know how it goes.
(b) (6)

On Friday, November 8, 2019, 08:30:46 AM MST, flavomarginatus <(b) (6) > wrote:

(b) (6),

A reporter name Sandra Sanchez is coming out today from South Texas. We're heading down to the San Bernardino Valley and I just want to give you a heads up. If there's anything that I should know please let me know. We
Will be down there probably about 2 o'clock.

(b) (6)

Sent from my iPhone

From: (b) (6)
To: flavomarginatus
Cc: Bill Radke; (b) (6); (b) (6); (b) (6); (b) (6)
Subject: [EXTERNAL] Re: Reporter
Date: Friday, November 8, 2019 11:13:09 AM

No worries, and I appreciate the conversation and heads up...
I just wanted you to know the complications of heading into the Roosevelt Easement and actually getting to the border project itself.
I understand all that you are saying and believe me we see it first hand and what is going to be affected. The wildlife is the main physical reason to not want this...all other things can adapt...birds, etc...the ranching itself no longer depends on the cross border relations and landscape sharing like it did in the 60's when Mom and Dad first bought this ranch.
The visual of having the fence is going to be a heartbreaker and it is already visible from GTR, on the east side of the ranch.

The water use is being heavily monitored...the refuge is under the gun on this and Bill is doing his best to stay ahead of the game.

I think about this all the time.
Naively, in the beginning I thought we could stop this project...Then there was a stage of the game where it was like standing in a ditch dug through sand and no matter how fast you shoveled the sand out, more filled in around you...those granules of sand being the people against the wall, the people for the wall, the politics, the meetings, the property tax consequences, the accusations that we as a family had chosen to support the wall, the ongoing conversations and meetings regarding design through the canyons, the consequence of the project disallowing us to be able to use the lower 1/3 of this ranch for cattle production until 2021...because of the heavy traffic, machinery, road enhancement, water use...the judgements that come because we have to divide our conversations and actions between being against the project and accepting the project, the fact that there are conversations to have daily concerning the process, the use of water, the contract agreement, concerns to the conservation of the area, the USACE actually telling me yesterday that I could not be on my private land...it was a young kid and he had no idea he was standing on our private property that is NOT under contract to be used and after my ***truly*** gentle explanation he "got it" and realized he better do his homework.....

And then....the cartels have figured out how to saw through this structure!!! I am sure they will steal the lights and cameras and sensors...it is just a matter of time and innovative thinking.
Anyway, travel safe and stay the course.
(b) (6)

On Friday, November 8, 2019, 10:11:24 AM MST, flavomarginatus <(b) (6)> wrote:

(b) (6),

Thank you for the tips. I am aware of many of these issues and am very tactful of the Glenn Ranch and MBG involvement.

My interests in this are primarily wildlife issues. Just about every reporter wants to know about the Jaguar. But what I am trying to remind people of is that the common species like deer, Havelina, pronghorn, bobcats, mountain lions are likely to be affected because their populations will be fragmented. As we all know, many of these species move throughout the day month or the season in order to access changing food forage and prey resources.

It is quite unfortunate that a major land-use project that will work create unknown, but profound negative

ecological impacts upon the land has become a political issue. In a normal world there would've been studies and review. But as we all know, nothing about the construction of this wall is based upon data. We were illuminated by that fact when the day of the board meeting the agent in charge informed us of how few people are being apprehended and that numbers of drug seized in the desert has become almost negligible. If that didn't underscore the lack of need for a 30 foot border wall, then I don't know what does.

I am aware of everyone's private concerns and have not and will not do anything to compromise that. This is precisely why I contacted you to let you know about this and to ask you for your concerns.

(b) (6)

On Nov 8, 2019, at 9:35 AM, (b) (6) <(b) (6)> wrote:

Myles!
Thanks for the heads up. I am going to cc some of the MBG on this response, since it is all information that may affect future press trips.

USACE will monitor you on the Roosevelt easement and that is legitimate.
It is now a construction zone and the Army Corp is not allowing the public nor reporters, nor locals, especially during daylight hours.
They are not trying to be hard cases...they are liable and they are protective.

You may be challenged by USACE...be nice, amicable, understanding.

Another issue that is affecting the contractors is the shooting in Bavispe.
They have received some "warnings" of sorts and their crews are leary and some have quit.

We were down there with NBC on a human interest story and it took me one month to get the process and permission in place.
My time with them expired at dark yesterday.

I am not able to help you today...too much going on here regarding other issues.

You might be blessed by 2:00 and have the crews thinning for the weekend...but...they have been working through the weekends...not sure what Veterans Day will hold...
Unfortunately, ***you can not say you are with us (as a ranch),*** because I released our access commitment for press as of dark last night.

I am not bringing MBG into any of our conversations with anybody.
This is no longer about getting a wall or not getting one...there have been a lot of developments and ***a lot of conflict*** and we ((b) (6)) have managed to resolve most of the issues that have faced our ranch, land, water, etc.

Arizona Daily Star came last week and we had to stay north of the bridge in Silver Creek...
I changed their story this morning, because one of the issues we had last week with the County has been legally resolved and is old news and was resolved in a amicable way and I do not want any bad blood between the County and us because of the press.

If you are going to address the water use issue...you need to check with Bill Radke.
He and our family have a common ground and have a lot of metering and research going on and the issues two weeks ago that were volatile and on fire have resolved themselves and we are all moving forward with good relations and trust...

This is no longer an issue that can be addressed randomly... there are now processes that the local immediate "players" have agreed on and are working together on...the contractor, us, and the refuge.
DHS, USACE, BLM and State Land are all in the conversations that come up day to day.

So, not to rain on your parade and your reason for coming.
Just a heads up...the Roosevelt Easement is a place you will probably not be allowed for more than a few minutes until someone reports you.
You will also not be allowed on the construction area. They are very protective and ironically it is more from their concerns of what happened in Mexico!
Let me know how it goes.
Kelly

On Friday, November 8, 2019, 08:30:46 AM MST, flavomarginatus <(b) (6) > wrote:

Kelly,

A reporter name Sandra Sanchez is coming out today from South Texas. We're heading down to the San Bernardino Valley and I just want to give you a heads up. If there's anything that I should know please let me know. We
Will be down there probably about 2 o'clock.

Myles

Sent from my iPhone

From: (b) (6)
To: Bill Radke
Subject: [EXTERNAL] Re: Tuesday Border Tour
Date: Sunday, October 13, 2019 10:30:27 PM

OK, good to know.
Regarding the well on the border east of the refuge...based on what I know...the contractors are drilling on the Roosevelt easement and we have no control over that...they are going to drill one somewhere over there...I can ask if they will drill closer to Guadalupe?? I was told they were drilling wells and then abandoning them when they leave...
I think that is a waste...if nothing else and they are going to drill...there has to be some since made of it all...
I think they are talking to State Land Department also...I am out of that conversation...unfortunately.
I will see what I hear on Tuesday.
Thank you for the email.
K

On Sunday, October 13, 2019, 08:14:13 PM MST, Bill Radke <bill_radke@fws.gov> wrote:

(b) (6); After thinking it over, it is probably best if I do not try and participate in the Tuesday border tour. I spoke with (b) (6), (b) (7)(C) on Friday, and again expressed my concerns about all the wells being drilled on all sides of the refuge. He mentioned he will be on your tour Tuesday, but he never suggested I try to meet up and participate, and that was a good hint to me. I would ask that you and (b) (6) please consider not allowing contractors to drill a well on your east border pasture. FWS has been imploring DHS to not drill or use water within five miles of the refuge. They are abiding by this five mile buffer at the San Pedro River and at Quitobaquito spring near Ajo, but they have not followed that same rule at San Bernardino. The reason (b) (6), (b) (7) keeps giving me is “the contractors have a contract to use the (b) (6)’s water, and there is nothing DHS can do to change that.” With our artesian wells failing, Slaughter Ranch has now requested on a Friday to drill a domestic well on their property, which will be one more draw on the aquifer. I do wish you well, and hope your border tour goes well. Thank you, Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

From: adfinks
To: Radke, Bill
Subject: [EXTERNAL] Re: USFWS Updated Technical Analysis Regarding Border Wall Construction and Groundwater Withdrawal
Date: Tuesday, November 12, 2019 10:08:39 AM

Thanks, Bill.

Please measure anything you want. I met your new employee at the ranch the week before last. We should start drilling soon. Stay in touch. Alan

Sent from my MetroPCS 4G LTE Android Device

-------- Original message --------
From: "Radke, Bill" <bill_radke@fws.gov>
Date: 11/12/19 6:57 AM (GMT-07:00)
To: Alan Finks <(b) (6) >
Subject: USFWS Updated Technical Analysis Regarding Border Wall Construction and Groundwater Withdrawal

Hi Alan; The USFWS updated their Technical Analysis (hydrology report) based upon new numbers provided on 11/01/19 by U.S. Army Corps of Engineers regarding water use estimates and timing of water withdrawal. I want to be certain you understand that this analysis is based upon the information provided by USACE, which remains incomplete (does not take into effect any water withdrawal from the new Mile Marker 9 well, for example). I also want you to understand that this analysis was calculated and provided to DHS/USACE last week simply to help articulate USFWS concerns, provide a more accurate risk assessment, and to help the agencies and contractors consider ways to adequately address the concerns and minimize or mitigate negative impacts. I have also requested help from Region-2 USFWS hydrologists to help measure current groundwater conditions on SBNWR and (with your permission) at Slaughter Ranch, and refuge staff are cooperating with Arizona Department of Water Resource personnel to collaborate in measuring refuge wells to help document potential changes. Please contact me if you have comments or questions about any of these issues. Thank you, Bill
--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Friday, December 20, 2019 4:03:45 PM
Attachments: VuSitu_2019-12-13_12-58-54_Mitigation Well_Log_Mitigation_Well_29Nov19.zip

---

Mitigation Well

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Friday, December 20, 2019 4:03:23 PM
Attachments: VuSitu_1969-12-31_17-00-00_Bunting Well_Log_Bunting_13dec19.zip

---

Bunting Well

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Tuesday, December 17, 2019 4:17:55 AM
Attachments: VuSitu_2019-11-29_11-00-00_Hay Hollow Well_Log_Hay_Hollow_Well_29Nov19.zip

---

Hay hollow well

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Tuesday, December 17, 2019 4:17:36 AM
Attachments: VuSitu_2019-12-10_13-26-21_Bunting Well_Log_Log_2019-12-10 bunting.zip

---

Bunting

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Tuesday, December 17, 2019 4:17:12 AM
Attachments: VuSitu_1969-12-31_17-06-25_Twin well_Log_Log_2019-12-10 twin.zip

---

Twin well

From: (b) (6)
To: joaquin_baca@fws.gov; cassondra_walker@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Tuesday, December 10, 2019 3:20:08 PM
Attachments: VuSitu_1969-12-31_17-00-00_Bunting Well_Log_Bunting_well_04Dec19.zip

From: (b) (6)
To: cassondra_walker@fws.gov; joaquin_baca@fws.gov
Subject: [EXTERNAL] VuSitu Data File
Date: Friday, December 20, 2019 4:03:54 PM
Attachments: VuSitu_2019-11-29_11-00-00_Hay Hollow Well_Log_Hay_Hollow_Well_29Nov19.zip

---

Hay hollow well. Turned on water to ponds at 8:45 on 16 Dec

From: (b) (6)
To: Bill Radke
Subject: [EXTERNAL] Webster with notes
Date: Wednesday, October 16, 2019 10:03:48 AM
Attachments: SBNWR Notes for 101519.pdf

Dear Bill:

Enclosed.

The really fun bird was a speck way high in the sky—an adult Bald Eagle migrating south, showing no interest in the refuge, and heading into Sonora. Spotted by chance. My first at the refuge, and one of a half dozen I have seen in the region. Amazingly, five minutes later I was looking at an immature Golden Eagle, which I see less than yearly at the refuge, circling low with Chihuahuan Ravens keeping it "company." The aesthetics were absent, but it was exciting to see the bird actively migrating.

Otherwise, four Black Vultures. Not to rub salt in a wound, but what was intended as Catfish Habitat was serving as Rock Wren Habitat yesterday!

A moderate species list, as one would expect in mid-October, but, in general, tiny numbers of most species, and places like Black Draw were a morgue. Not a single bird at Minckley on two visits (that could be because of an accipiter, but it gives you an idea). Species in good numbers were Turkey Vultures, Chihuahuan Ravens, and foraging swallows.

I saw no one. Nothing out of the ordinary. In terms of Border activity, just a few pick-ups going by occasionally. The Construction Camp was busy, but not at all frenetic or really "active." At SBNWR, since my last visit a dirt ramp had been built just west of Black Draw (to help with unloading?) and four large (1.5 m diameter or so) pipes were being stored just south of Robertson.

(b) (6)

From: (b) (6)
To: Bill Radke
Subject: [EXTERNAL] Webster with notes
Date: Sunday, December 8, 2019 10:40:32 AM
Attachments: SBNWR Notes for 120719.pdf

Dear Bill:

Enclosed.

Oasis Pond is very low, which I strongly suspect you know/intend, but which I mention in case you don't.

My first visit in five or six weeks (off playing, versus playing here!).

The most interesting bird was an American Bittern (the logjam has broken, briefly at least). It was at Ben New and simply flew to the far side of Ben New and dropped back in. If you are out there, you might give that pond a close, loud walk around. I had little of interest and little overall—I was not expecting many sparrows, and there weren't many. It seems that it has been a relatively mild winter so far based on the vegetation, but that did not translate into more lingering insectivores, etc.; in fact, there were fewer than normal (no Empidonax, only one vireo—a Cassin's), with a couple of Common Yellowthroats the most unusual. No sign of any montane or irruptive species.

Obviously, I was interested to see what was happening along the Border.

I was also interested to see that the Refuge was hard at work (even on Saturday). Having much time on my hands (few birds), I was able to concoct various scenarios (Bill is removing mesquites to save water; Bill has returned to plans to create a Cienega; Bill has extorted water from the Border Wall project to accomplish that; Bill has done all of the above). Two sentences of reply or forwarding a relevant document would doubtless dull my curiosity and otherwise inform me.

Apart from the shortage of birds and The Wall, it was a lovely day and a mild one that Wimp Webster could thoroughly enjoy.

I will admit that at SBNWR I really don't think much about traffic, so I was embarrassed to realize that I had a vehicle behind me when I had stopped to try to see a bird (the guy doing clearing yesterday).

(b) (6)

From: Harden, Tasha
To: Bill Radke
Subject: border wall wells info
Date: Friday, November 1, 2019 2:05:57 PM

Attached are a couple pics showing all 3 wells in relation to the refuge and one showing how close the eastern well is to our boundary.

The GPS coords area;
Eastern well: 31.334364 109.228989
Western well: 31.334142 109.366205

let me know if you'd like anything else on this for now.

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From: Baca, Joaquin
To: Burck, Peter
Subject: broska cross section
Date: Tuesday, January 14, 2020 2:19:12 PM
Attachments: Determining Aquifer properties at the San Bernardino National.ppt

---

not sure if this is helpful. and i dont have the file path to where its located on K

--

Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."

Justice Oliver Wendell Holmes

From:	Radke, Bill
To:	Fernandez, Juliette
Cc:	Harden, Tasha
Subject:	CBP Response to SBNWR Comments Regarding Wall Construction
Date:	Monday, December 30, 2019 2:41:14 PM
Attachments:	CBP Response to FWS Comments dated December 6 2019.pdf
Importance:	High

Hi Juliette; I just wanted to pass this along to you. It is the December 6, 2019 U.S. Customs and Border Protection acknowledgement that they received my refuge comments and concerns regarding their proposed border infrastructure construction, which I mailed to them on June 10, 2019. Bill Radke

--

William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Fernandez, Juliette
To: Bill Radke
Subject: Cleaned it up a bit
Date: Tuesday, November 26, 2019 9:25:00 AM
Attachments: Aquifer.docx
Graphs.docx

I'll send it unless you have concerns.

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

From: Tasha Harden
To: Bill Radke; brenda_leon@fws.gov
Subject: Construction progress
Date: Friday, October 25, 2019 2:02:40 PM
Attachments: Untitled attachment 04443.txt
IMG_2537.JPG
IMG_2538.JPG
Untitled attachment 04446.txt
IMG_2539.JPG
Untitled attachment 04449.txt
IMG_2540.JPG
Untitled attachment 04452.txt
IMG_2541.JPG
Untitled attachment 04455.txt

Just since it's been a while since Brenda's been out and to update you Bill-

East side of refuge they've started moving the existing Normandy barriers out of the way:

From: Radke, Bill
To: Fernandez, Juliette; McIntyre, Julie
Subject: December 12, 2019 Border Infrastructure Construction Meeting?
Date: Tuesday, December 10, 2019 5:47:53 AM

Juliette and Julie; For a while now, I have heard rumors from landowners about a December 12 meeting during which USACE/DHS plan to explain their border barrier construction plans for major stream crossings (Black Draw, Hay Hollow Wash, Silver Creek, maybe San Pedro River) in southeast Arizona. I have heard nothing from any agency officials about this topic. Have either of you heard any information about a December 12 informational meeting, and if so, are you able to tell me the location and timing? Do you feel this potential meeting is something that refuge personnel should attend? Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From:	rod dossey
To:	Harden, Tasha; (b) (6), (b) (7)(C) ; Carl Demetropoulos
Cc:	Lester, Emily A CIV USARMY CESPL (USA); "Barnes, Michelle L CIV USARMY CESPL (US)"
Subject:	Discussion about CBP"s planned work at Black Draw
Start:	Friday, December 20, 2019 10:00:00 AM
End:	Friday, December 20, 2019 10:30:00 AM
Location:	(b) (5) Access: (b) (5)

All,

Due to the short notice I am hoping everyone can make this time to discuss the washout and planned CBP work at Black Draw.

Please let me know if you can't make, I will reschedule if necessary, but due to the holidays and how soso this work is set to start I am hoping everyone can make the call..

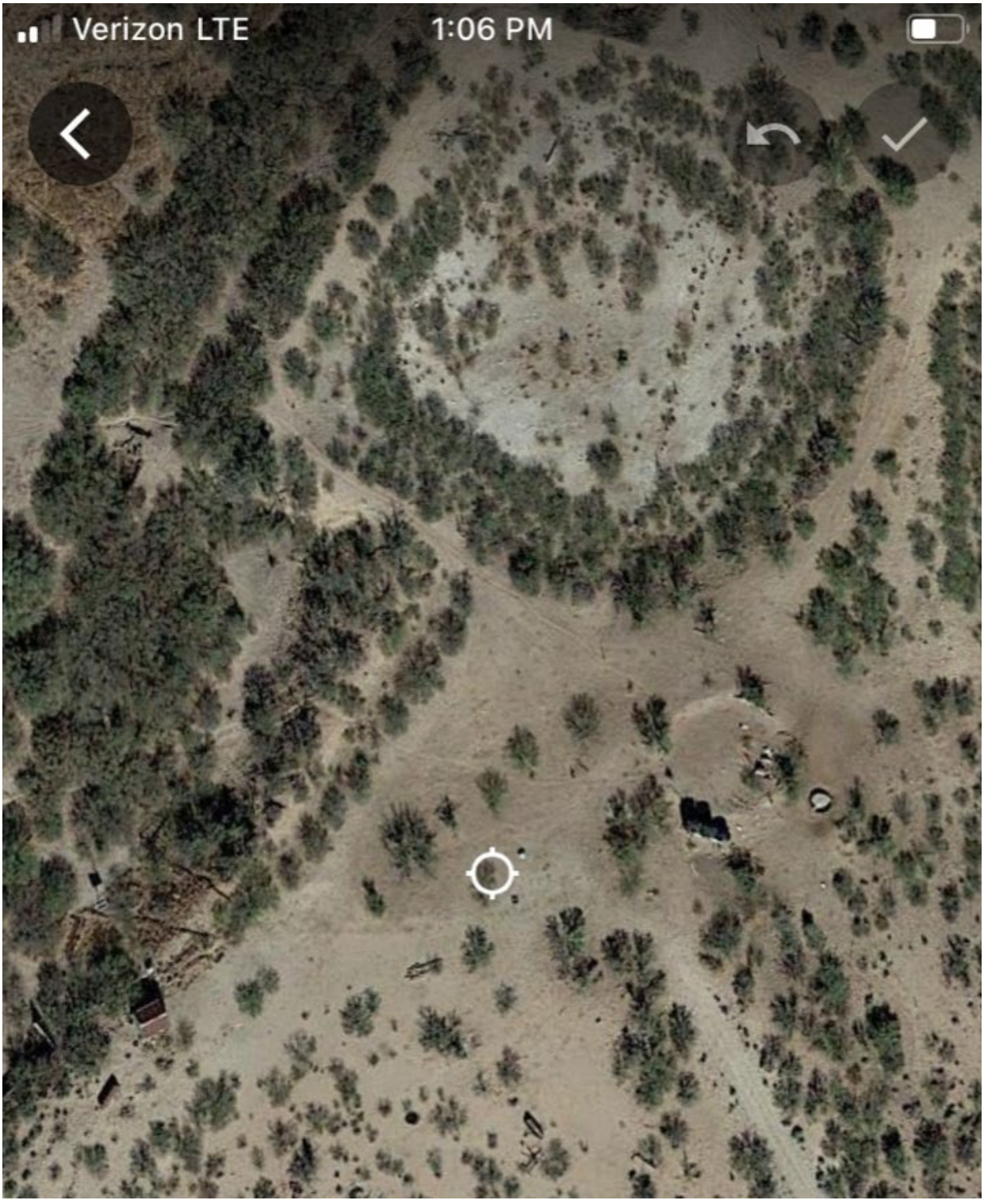
Thank-you,

Rod

Call in:

1 (646) 749-3122
Access Code: 679-069-181

From: Tasha Harden
To: Bill Radke
Subject: Distances
Date: Thursday, November 21, 2019 1:47:14 PM
Attachments: image3.png
image0.png
image1.png
image2.png
image4.png
image5.png
image6.png
image7.png



Distance

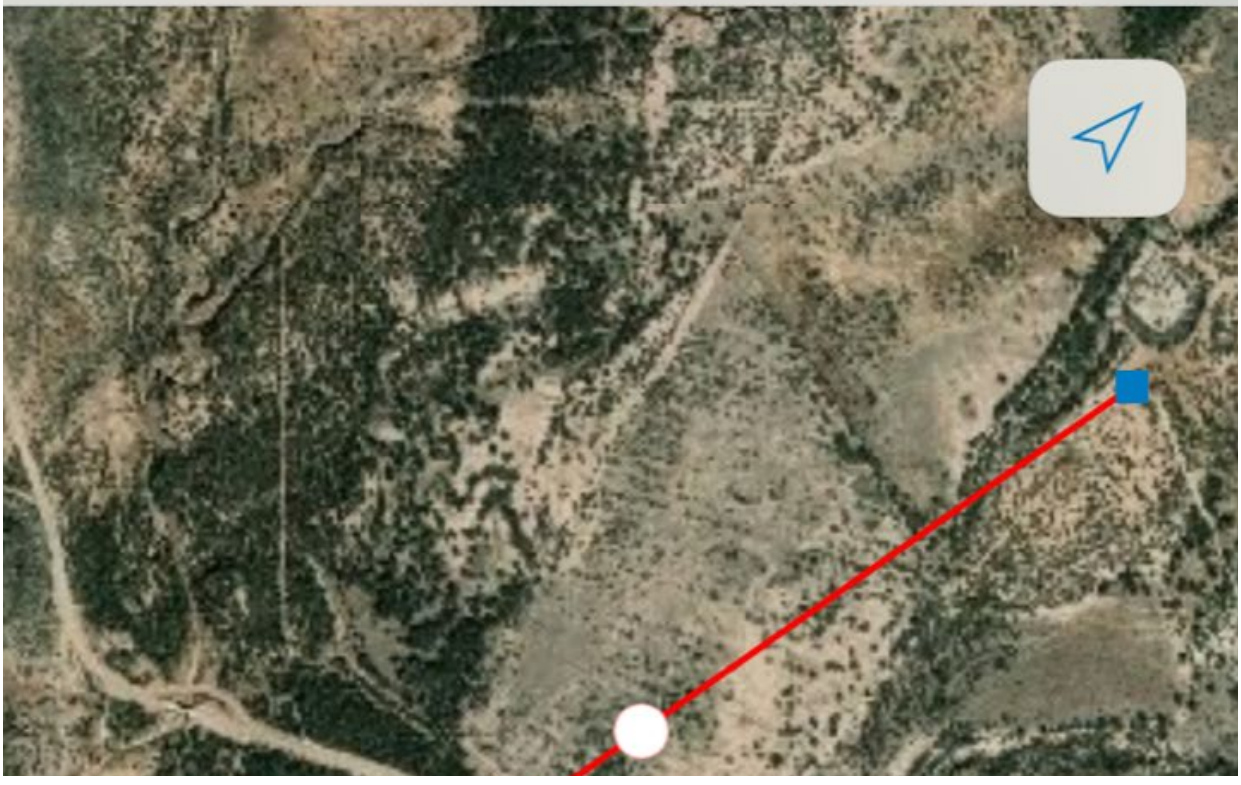
0.00 ft

+ Add Point

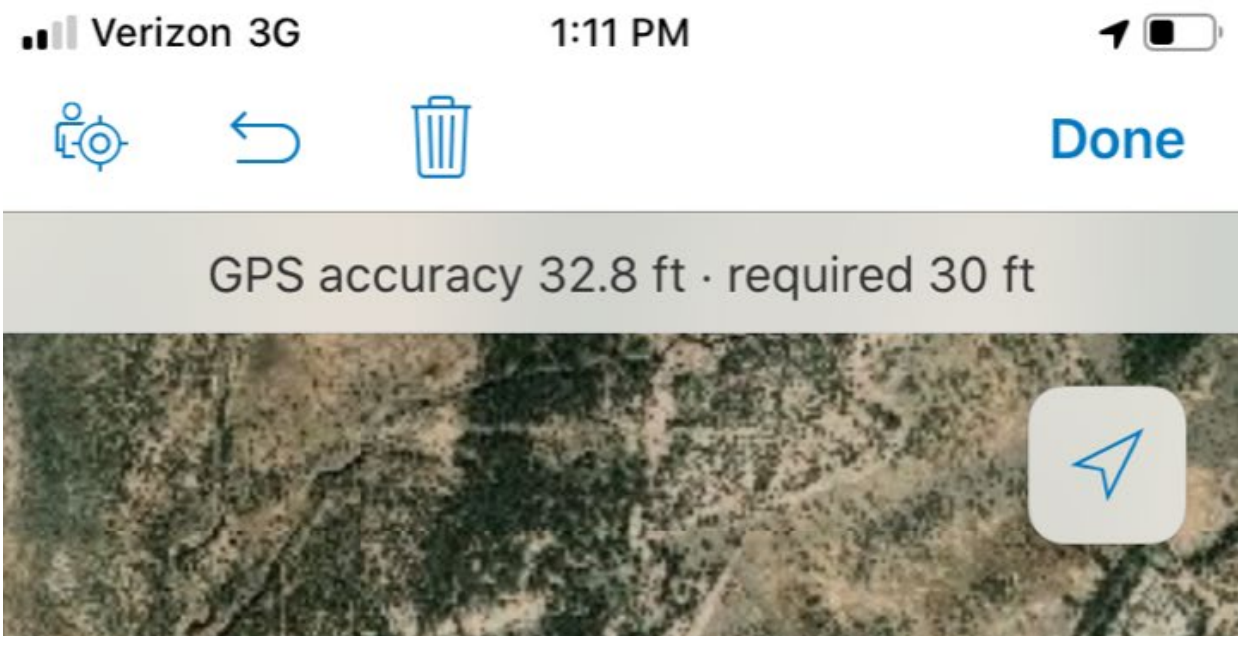
Verizon 3G 1:11 PM

Done

GPS accuracy 32.8 ft · required 30 ft

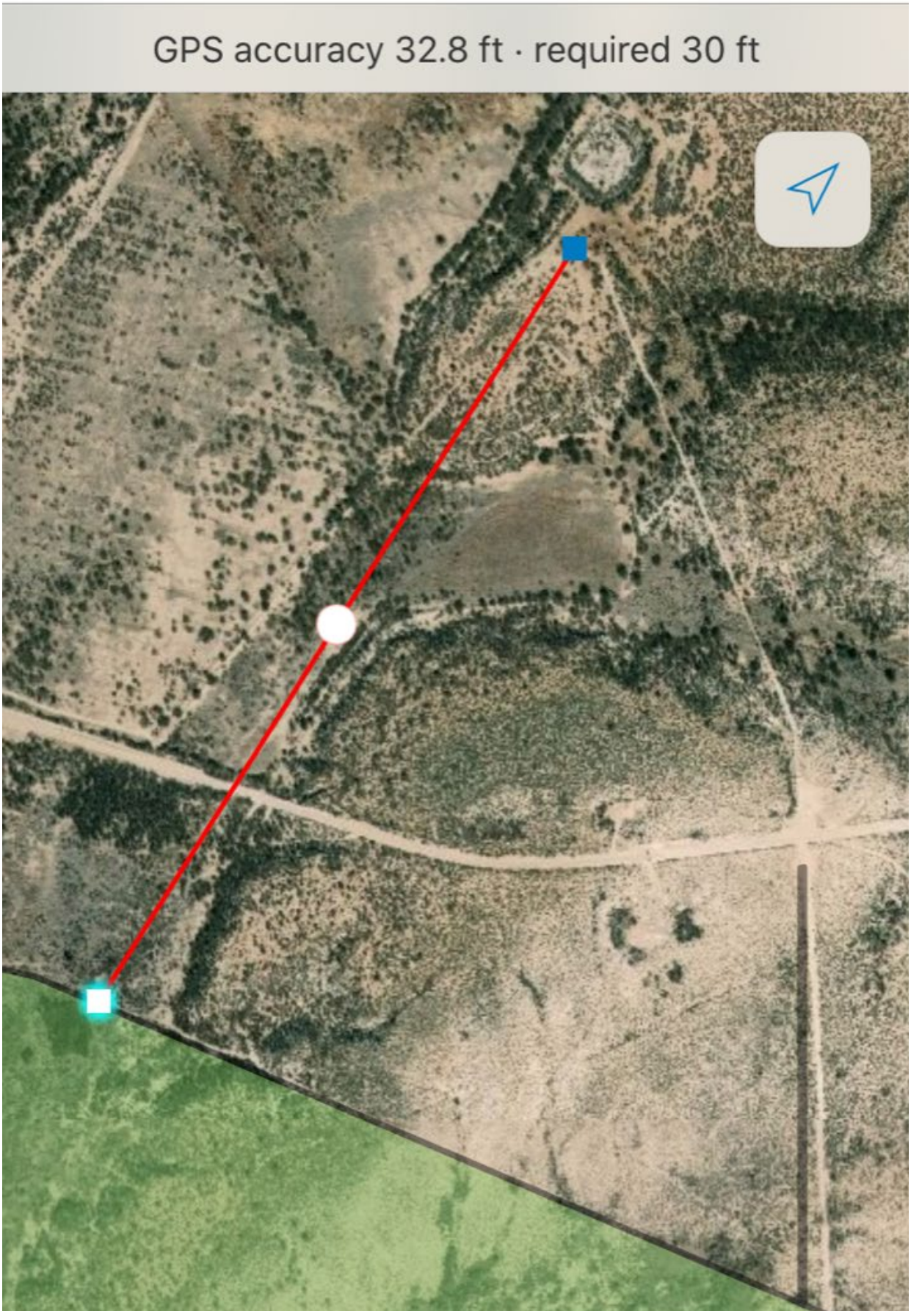


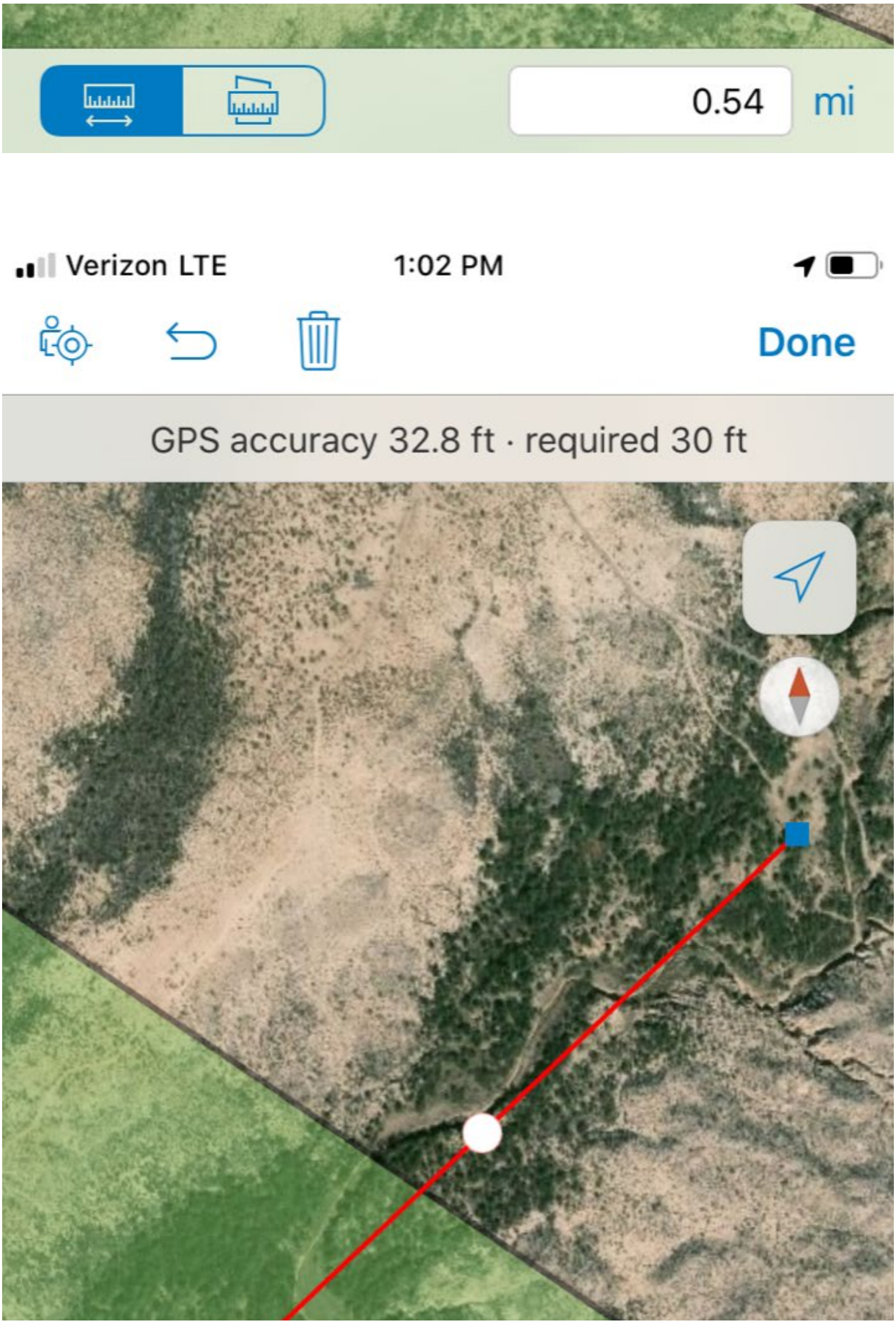
0.76
mi


Verizon 3G
1:11 PM
Done
GPS accuracy 32.8 ft · required 30 ft

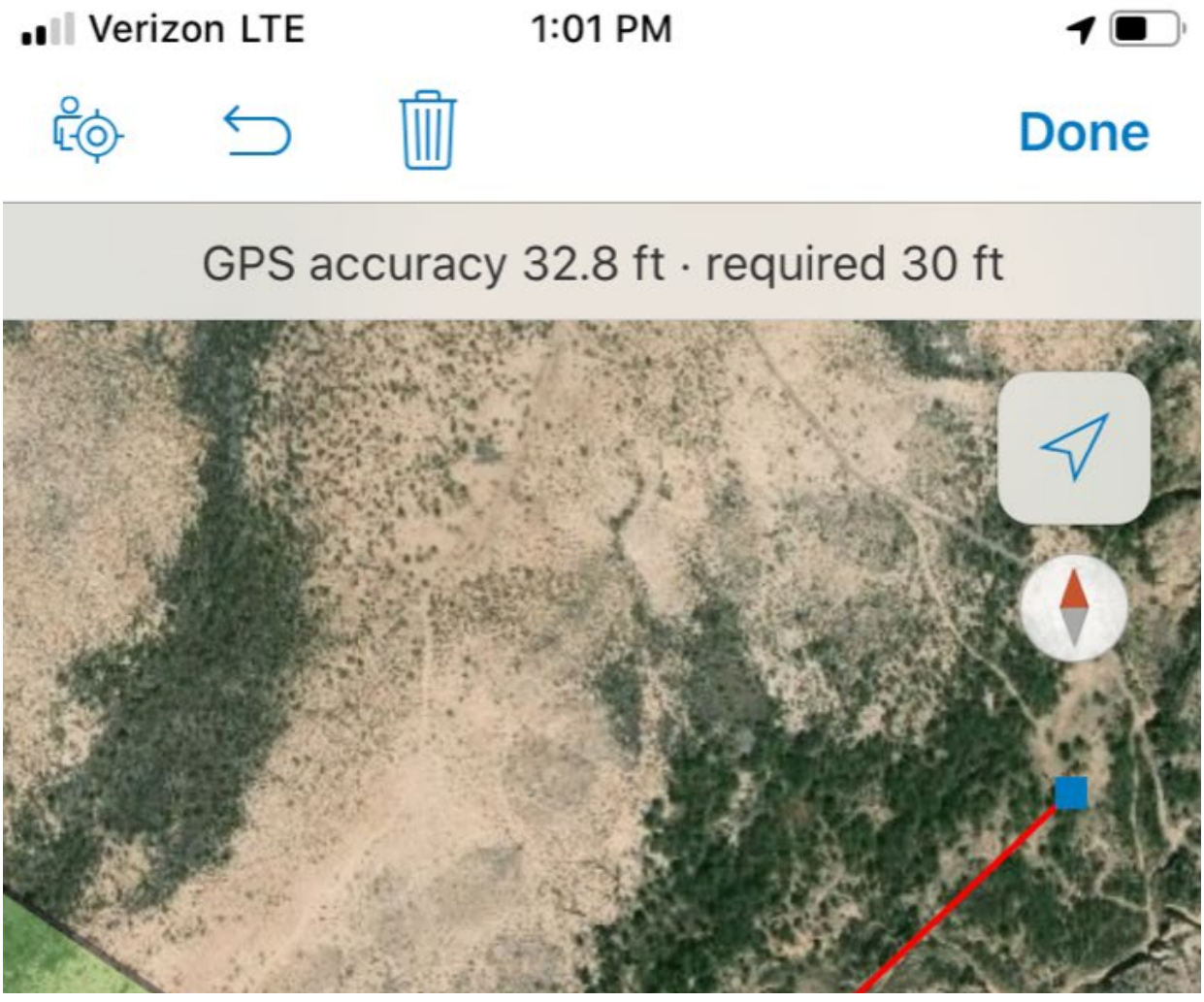
Verizon 3G 1:07 PM

Done


GPS accuracy 32.8 ft · required 30 ft


0.54
mi
Verizon LTE
1:02 PM
Done
GPS accuracy 32.8 ft · required 30 ft

0.53
mi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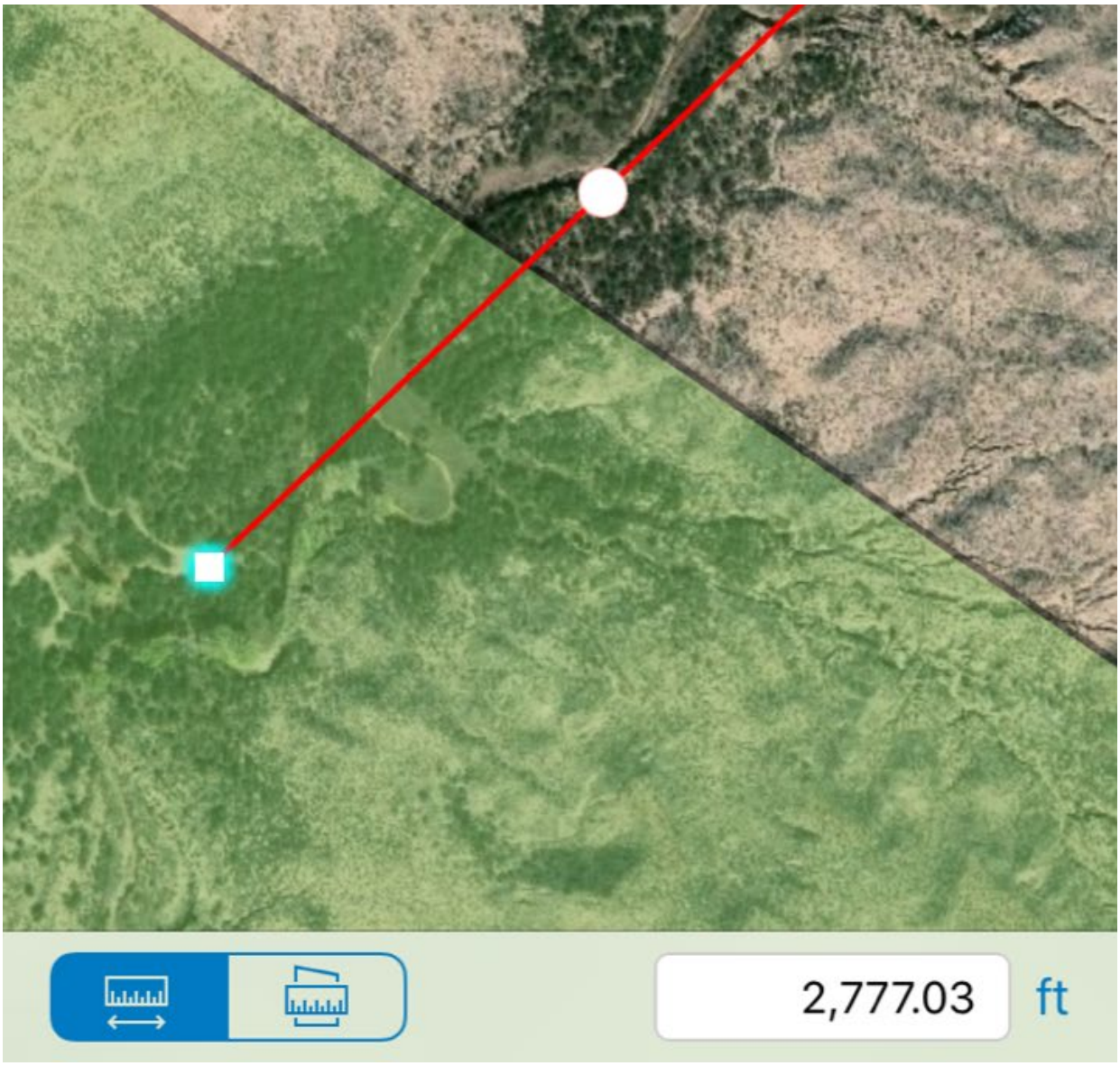
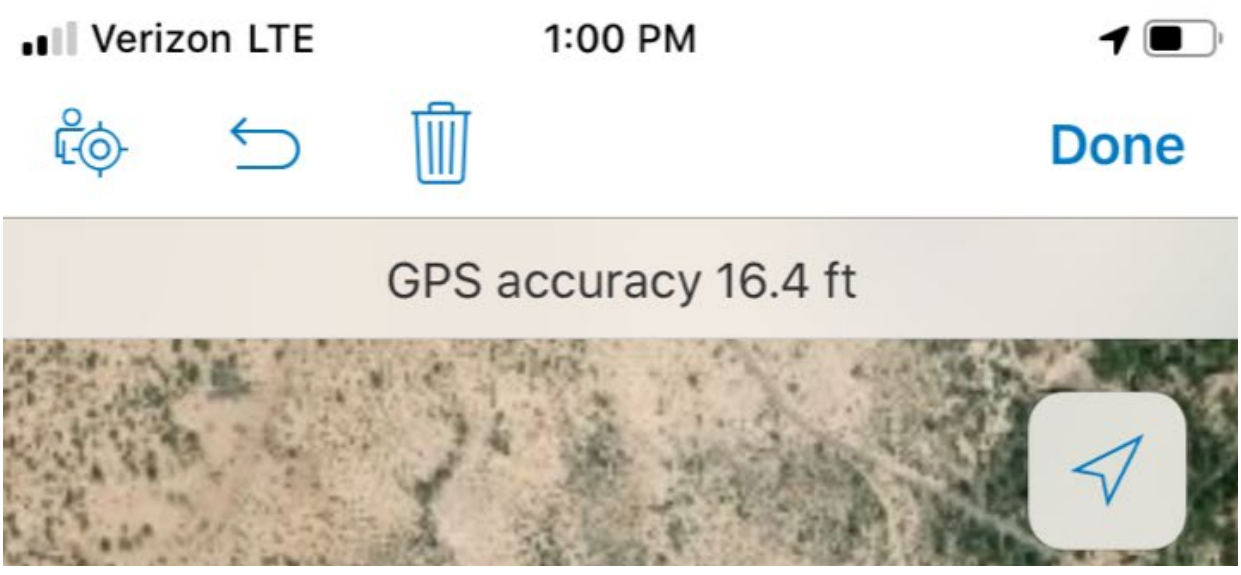
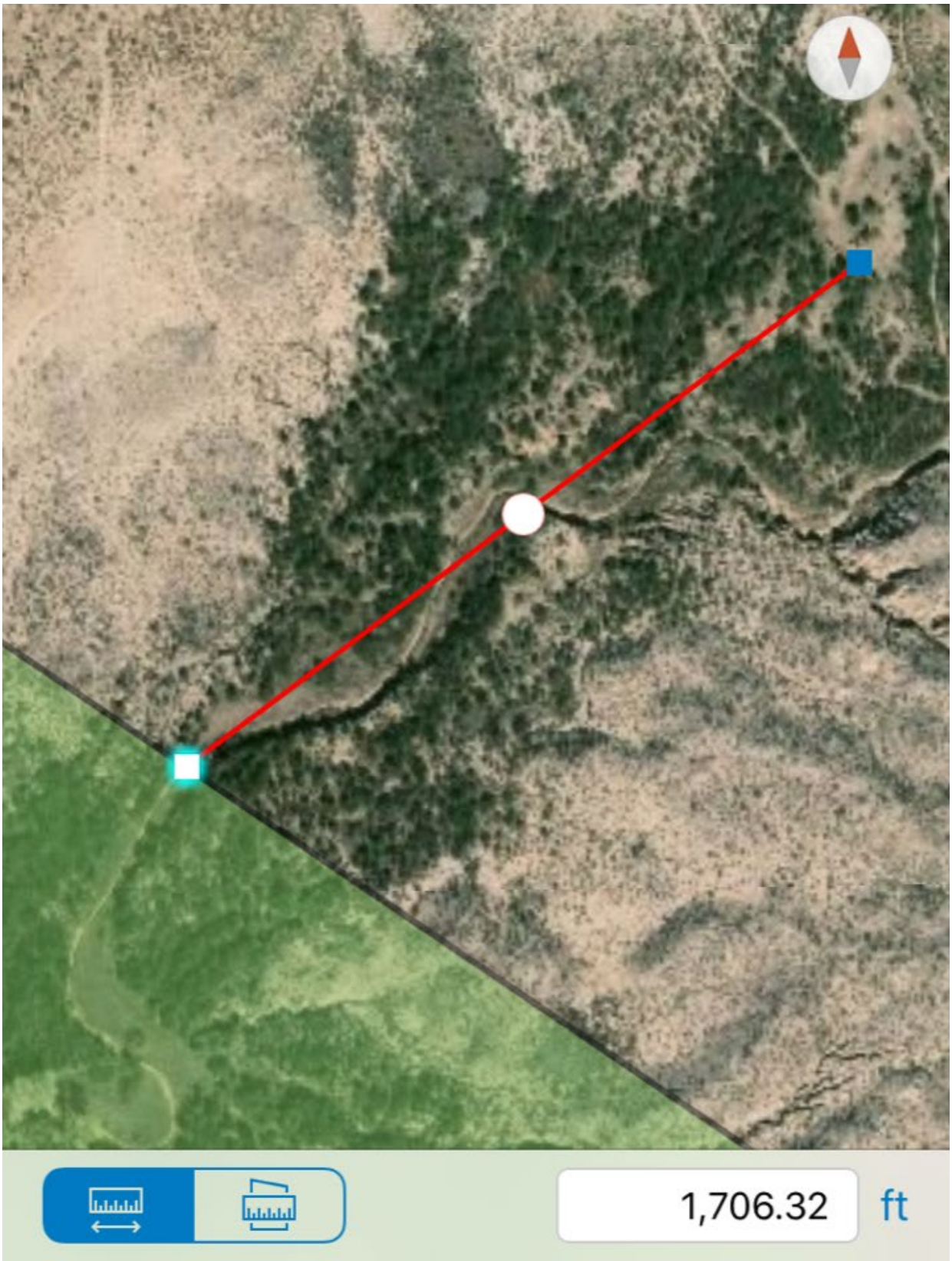
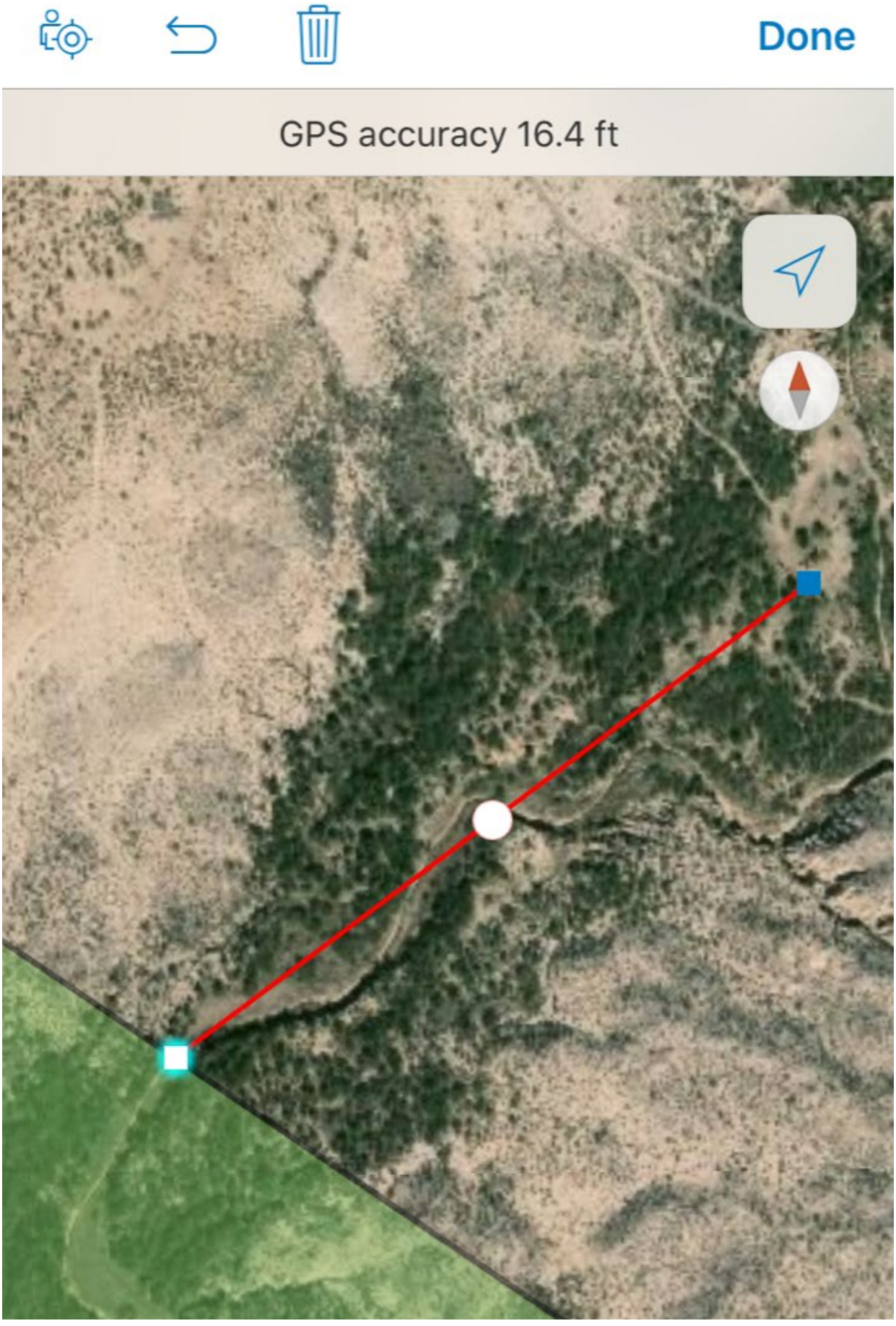

2,777.03
ft


Verizon LTE
1:00 PM
Done
GPS accuracy 16.4 ft



Verizon LTE 1:00 PM


Done
GPS accuracy 16.4 ft

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

From: Sesnie, Steven
To: Joaquin Baca; Grant Harris
Subject: Estimated water bodies for SBNWR
Date: Monday, January 13, 2020 9:42:17 AM

Hi Joaquin and Grant,
Here are estimates of water body surface area from hand digitizing them from a 3m dem, hillshade and NAIP imagery. There are also stream channel models overlaying the imagery from taudem hydro models, this one using D8 (8 flow directions), which is good for defining principal washes and channels from the surrounding contributing area. I've added a bar graph showing the area for each mapped waterbody that corresponds to the map label (Id).

The .pdf is georeferenced, so it can be used in Avenza or ArcGIS if needed.

Best,
Steve

--
Steven E. Sesnie, Ph.D.
Spatial Ecologist
U.S. Fish & Wildlife Service
Southwest Region
P.O. Box 1306
Albuquerque, NM 87103-1306
505-248-6631 office
505-280-9903 cell
505-248-6460 fax
Webpage: https://southwestnwrsnatresources.wordpress.com/biological-sciences/steven-e-sesnie-ph-d/

Call
Send SMS
Add to Skype
You'll need Skype CreditFree via Skype

From:	Fernandez, Juliette
To:	Lester, Emily A CIV USARMY CESPL (USA); (b) (6), (b) (7)(C); Barnes, Michelle L CIV USARMY CESPL (US); Brent Range; Bill Radke
Subject:	Fish Question
Date:	Friday, December 20, 2019 3:07:19 PM

Hi Emily,
I spoke with Bill Radke about the question regarding diameter for fish passage that was raised during the call. The engineer asked if 4-5" was large enough for fish to move through the low flow if I understood correctly.

The fish on the refuge could be ~10" long in size and should fit through 4-5" openings. That said, there may be other factors that play into the answer. We would want to make sure that fish could go in and out in both directions year round. If during floods, a small diameter causes the velocity of water to increase significantly, it may make it difficult for fish to move back and forth. Additionally, if the openings are 4-5 inches and get obstructed even in part by debris, it could limit the ability for passage and should be maintained consistently or left open to allow larger debris to pass through. Might the contractor have a diagram of what they are considering? We can speak with some of our fish passage experts if I have that.

Thank you,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

Tischer, David P

From: Tasha Harden <tasha_harden@fws.gov> on behalf of Tasha Harden
Sent: Monday, December 16, 2019 7:21 AM
To: Joaquin Baca; Darrell Kundargi
Subject: Fwd: Slaughter Ranch Well (12/13/19)

FYI

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

Begin forwarded message:

> **From:** "Walker, Cassondra" <cassondra_walker@fws.gov>
> **Date:** December 16, 2019 at 6:59:34 AM MST
> **To:** "Radke, Bill" <bill_radke@fws.gov>, "Harden, Tasha" <tasha_harden@fws.gov>, Monty Mcdaniel <monty_mcdaniel@fws.gov>
> **Subject: Slaughter Ranch Well (12/13/19)**
>
> When I went to take well measurements at Slaughter Ranch on Friday (12/13) they already had the pump installed. I am attaching pictures so that we can figure out how to get a transducer set up here. Fred is supposed to let one of us know when the well guy is coming back (sometime this week) so maybe we can work something out. At some point this will be enclosed in a shed, according to Fred.
>
> [image: IMG_0233.JPG]
>
> [image: IMG_0234.JPG]
>
> --
> Cassondra Walker, PhD
> US Fish and Wildlife Service
> Refuge Biologist
> San Bernardino and Leslie Canyon NWR
>
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104x105
> Cell: 520-368-6010
> Fax: 520-364-2130

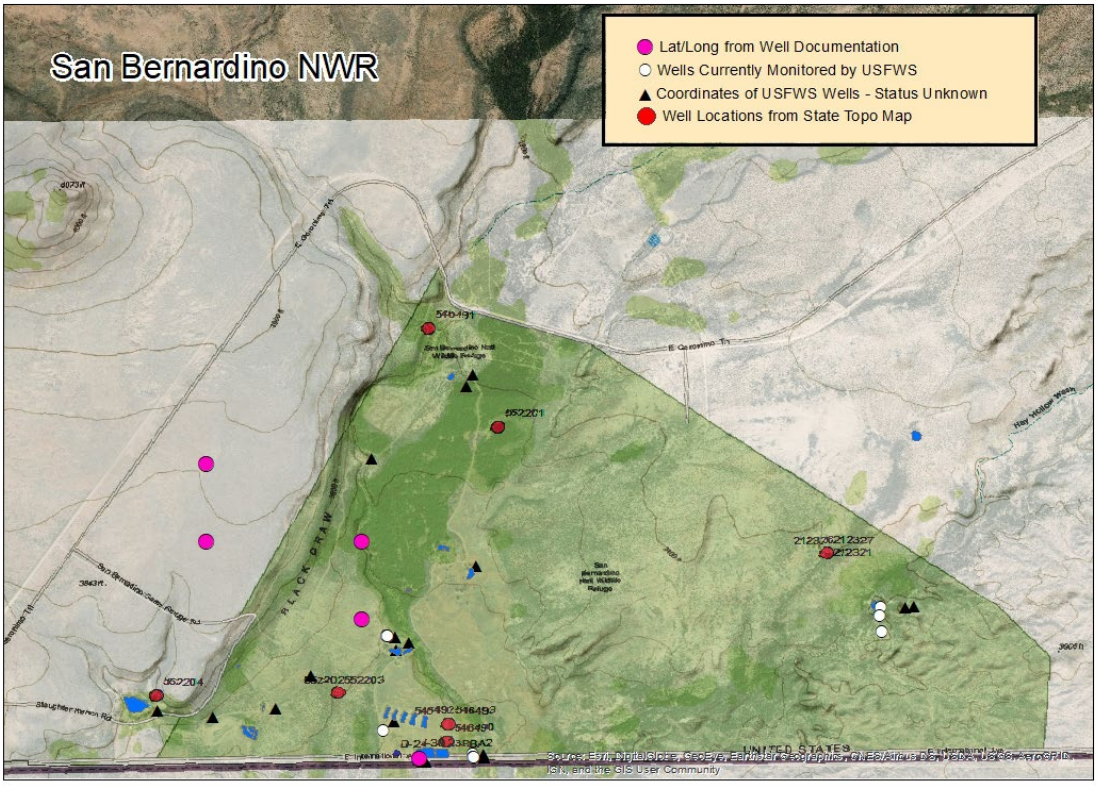
From: Walker, Cassondra
To: Radke, Bill; Harden, Tasha
Subject: Fwd: [EXTERNAL] Fwd: Inventory and Measure San Bernardino Wildlife Refuge
Date: Thursday, November 7, 2019 10:12:08 AM
Attachments: image.png
image.png
212326.pdf
212327.pdf
552201.pdf
55-589794.pdf
212321.pdf
552203.pdf
552202.pdf
552204.pdf
312003109154601.pdf
StateLocations for SanB_wells.pdf

Hey Bill,

I wanted to give you a status update on the state's efforts to monitor our wells. I was contacted by a guy named Aaron to come monitor the wells. We agreed to go out on Friday. He sent me info on the wells that they are wanting to monitor (below in email chain). I have two topo maps (one for each refuge) with well locations on them and also some well documentation from when the wells were drilled. I georeferenced the topo map for San B so I could try to get a better idea of what wells they want to monitor. After doing this, I added the wells that I monitor, the coordinates of other wells that used to be on the refuge, and coordinates from the well documentation that I could find. I created a map (below, and attached) and as you can see there is a lot of discrepancies in where wells are located. I'm fairly certain that one of the wells is Spring Snail well, but the rest I'm not really sure. Do you happen to know of any other secret well locations that might explain the locations that they have.

For Leslie Canyon, I do not have a map because I do not have imagery associated with a reference system to use to georeference their topo map. However, from the coordinates it looks like 99Bar and BarBoot are on the list.

After talking with Tasha, I'm going to explain to them that I don't know where all of these wells are and see what they want to do. Hopefully, they will be fine with just monitoring the wells I already check. I'm happy to help them search for these other wells, but I don't think it will do much good. Do you have any further guidance on how you want me to handle this?



---------- Forwarded message ---------
From: **Aaron Stolley** <adstolley@azwater.gov>
Date: Wed, Nov 6, 2019 at 6:44 PM
Subject: [EXTERNAL] Fwd: Inventory and Measure San Bernardino Wildlife Refuge
To: cassondra_walker@fws.gov <cassondra_walker@fws.gov>

---------- Forwarded message ---------
From: **Teri Davis** <tddavis@azwater.gov>
Date: Tue, Nov 5, 2019 at 1:02 PM
Subject: Inventory and Measure San Bernardino Wildlife Refuge
To: Aaron Stolley <adstolley@azwater.gov>
CC: Scott Stuk <sstuk@azwater.gov>, James Dieckhoff <jdieckhoff@azwater.gov>, Paul A. Ivanich <paivanich@azwater.gov>

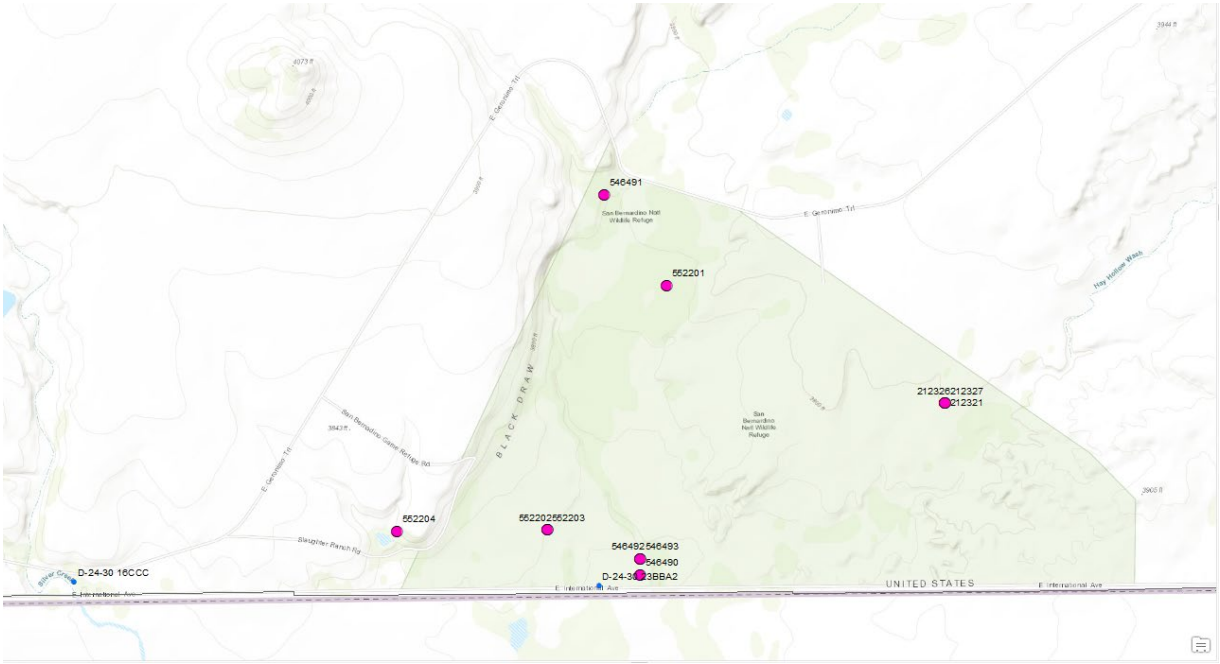
Hi Aaron,

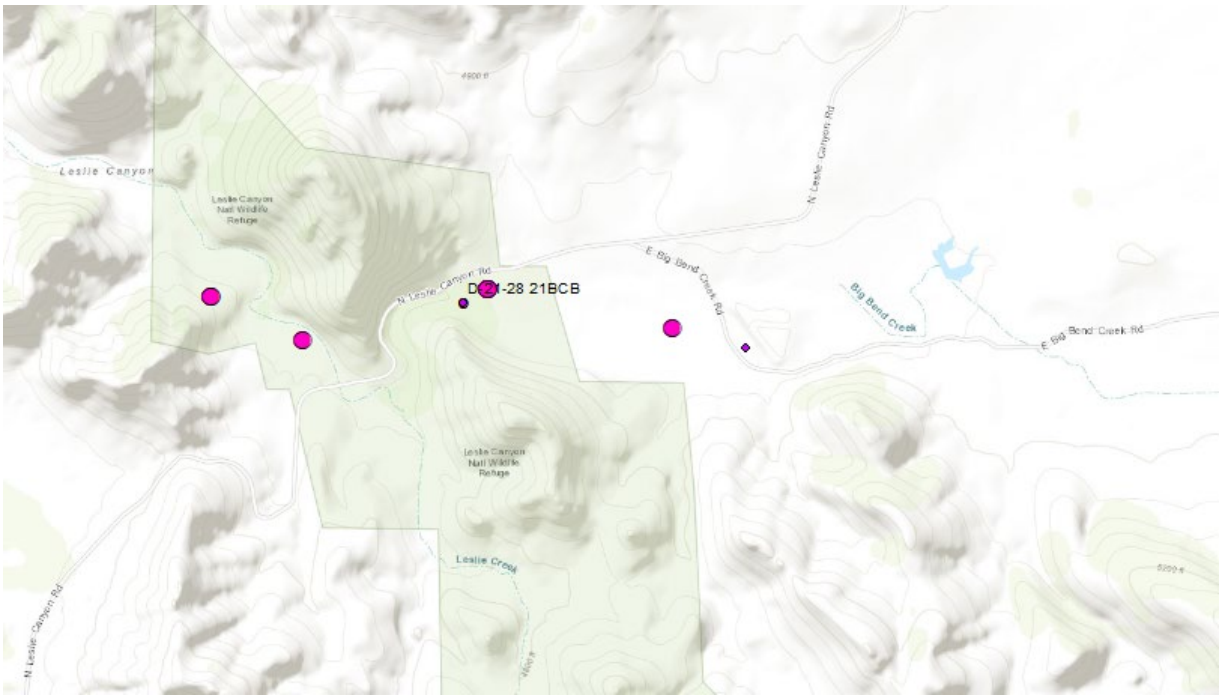
If you have time, please inventory and measure the following wells; image records and snip

map are attached:
San Bernardino Wildlife Refuge
55-552204
55-552202
55-552203
55-212321
55-212326
55-212327
55-552201
Leslie Canyon NWR
55-589794 Already in GWSI - 313523109293101, D-21-28 21ADC just update and get WL

Also, check to see if we can add back in. Master scan attached
312003109154601- BK00

This is in response to the water being used to build the border wall and production wells declining WLs. THANKS!





--

Teri D. Davis R.G., Manager

Field Services Section, Hydrology Division

Arizona Department of Water Resources

1110 W Washington St Suite 310

Phoenix, AZ 85007

(602) 679-0932 cell

tddavis@azwater.gov

--

Aaron Stolley

Basic Data Unit Team Lead

Arizona Department of Water Resources

Office: (602) 771-8734

Cell: (602) 525-0442

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From:	Fernandez, Juliette
To:	Bill Radke
Subject:	Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
Date:	Monday, November 25, 2019 10:16:52 AM
Attachments:	ATT00001.txt 20191125 Kirkpatrick Letter- CBP.pdf

---

Let's have a call if you feel there is something significant in here that needs to be addressed.

Thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:10 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Mary Elder <mary_elder@fws.gov>, Aaron Archibeque <aaron_archibeque@fws.gov>, Juliette Fernandez <juliette_fernandez@fws.gov>, Beth Ullenberg <beth_ullenberg@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>, Seth Willey <seth_willey@fws.gov>, Steve Reagan <steve_reagan@fws.gov>

Good morning. I am forwarding a copy of the letter that Representative Kirkpatrick sent to CBP regarding border wall construction in her district and expressing her concern over activities near San Bernardino National Wildlife Refuge. She cc'd Aurelia Skipwith and USBP on the letter. I forwarded the letter to HQ CLA to ensure the Director's office receives a copy. Please let me know if you have any questions. Lesli

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:50 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: <emily.cummins@mail.house.gov>
Cc: <billy.kovacs@mail.house.gov>, Martin Kodis <Martin_Kodis@fws.gov>, Helfrich, Devin <devin_helfrich@fws.gov>

Hi Emily, thank you for your email. I have included Martin Kodis and Devin Helfrich in our

HQ Office of Congressional and Legislative Affairs on this reply to ensure that the Director's office receives a copy of this letter.

I hope you have a Happy Thanksgiving.

Best Regards,
Lesli

On Mon, Nov 25, 2019 at 10:04 AM Cummins, Emily <Emily.Cummins@mail.house.gov> wrote:

> Good morning Lesli,
>
> Please see attached letter addressed to CBP Acting Commissioner Morgan from Rep. Ann Kirkpatrick.
>
> This letter discusses the San Bernardino National Wildlife Refuge in Cochise, County, Arizona. We CC'd USFWS Director Aurelia Skipwith for her awareness.
>
> Can you please make sure that the director is notified of this letter? And can you also confirm with me that you received this email?
>
> Please let me know if there are any issues viewing this letter, or if I should contact anyone else within USFWS.
>
> Thank you so much. Have a good rest of your week and a Happy Thanksgiving.
>
> Best,
> Emily

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

From: Humphrey, Jeff
To: Bill Radke; Julie McIntyre
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
Date: Monday, November 25, 2019 1:05:20 PM
Attachments: ATT00001.txt
20191125 Kirkpatrick Letter- CBP.pdf

FYI.

Jeff Humphrey (Field Supervisor)
Arizona Ecological Services Office
U.S. Fish and Wildlife Service
9828 North 31st Ave #C3
Phoenix AZ 85051-2517
office: 602-242-0210
direct: 602-889-5958
FAX: 602-242-2513
http://www.fws.gov/southwest/es/arizona/

---------- Forwarded message ---------
From: **Fasbender, Peter** <peter_fasbender@fws.gov>
Date: Mon, Nov 25, 2019 at 11:49 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Jeff Humphrey <Jeff_Humphrey@fws.gov>, Willey, Seth <seth_willey@fws.gov>

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:10 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Mary Elder <mary_elder@fws.gov>, Aaron Archibeque <aaron_archibeque@fws.gov>, Juliette Fernandez <juliette_fernandez@fws.gov>, Beth Ullenberg <beth_ullenberg@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>, Seth Willey <seth_willey@fws.gov>, Steve Reagan <steve_reagan@fws.gov>

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---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:50 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: <emily.cummins@mail.house.gov>
Cc: <billy.kovacs@mail.house.gov>, Martin Kodis <Martin_Kodis@fws.gov>, Helfrich,

Devin <devin_helfrich@fws.gov>

Hi Emily, thank you for your email. I have included Martin Kodis and Devin Helfrich in our HQ Office of Congressional and Legislative Affairs on this reply to ensure that the Director's office receives a copy of this letter.

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Lesli

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> Please let me know if there are any issues viewing this letter, or if I should contact anyone else within USFWS.
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>
> Best,
> Emily

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

--
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972-439-4542
lesli_gray@fws.gov

www.fws.gov/southwest

--

Peter J. Fasbender
Assistant Regional Director - Ecological Services
U.S. Fish and Wildlife Service
500 Gold Avenue SW
Albuquerque, New Mexico 87102
(505) 248-6671

From: Ullenberg, Beth
To: Bill Radke; Jeff Humphrey; Julie McIntyre; Erin Fernandez
Subject: Fwd: [EXTERNAL] Media Inquiry: Border Wall Construction in Arizona and Water
Date: Monday, October 28, 2019 1:51:30 PM

All-

We received a reporter inquiry regarding Slaughter Ranch near the San Bernardino Wildlife Refuge. Someone from FWS told the ranch owners that the border wall construction could result in their pond drying up. Can whoever is dealing with this please give me a call. Do not respond to the reporter, please just call me. 505-248-6638

Thanks -

Beth Ullenberg, External Affairs
U.S. Fish and Wildlife Service
P.O. Box 1306
Dennis Chavez Federal Building
Albuquerque, NM 87103
505-248-6638 office
505-414-3815 mobile

"The mission of the U.S. Fish and Wildlife Service is, working with others, to conserve, protect, and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people"

---------- Forwarded message ---------
From: **Kauffman, Vanessa** <vanessa_kauffman@fws.gov>
Date: Thu, Oct 24, 2019 at 12:44 PM
Subject: Fwd: [EXTERNAL] Media Inquiry: Border Wall Construction in Arizona and Water
To: Beth Ullenberg <beth_ullenberg@fws.gov>

Hi Beth,

Please see inquiry below.

Vanessa

---------- Forwarded message ---------
From: **Rocky Baier** <rbaier@email.arizona.edu>
Date: Thu, Oct 24, 2019 at 2:39 PM
Subject: [EXTERNAL] Media Inquiry: Border Wall Construction in Arizona and Water
To: <Ivan_Vicente@fws.gov>

Good afternoon,

My name is Rocky Baier and I am a reporter with the Arizona Daily Star. I am currently writing about the border wall construction and what it will do to water in the area, and for one story we are specifically

focusing on the Slaughter Ranch near the San Bernardino Wildlife Refuge.

Someone from FWS told the ranch owners that the border wall construction could result in their pond drying up. Could you confirm this? Do you know who the best person to speak to about this would be, and can you connect me?

Thanks so much for your time and help.

Sincerely,

Rocky Baier
Arizona Daily Star
480-710-1480

--

Ivan Vicente
Division of Public Affairs
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803
Office: 703-358-1730
Cell: 703-217-2125

--

Best,
Vanessa C. Kauffman
Division of Public Affairs
U.S. Fish and Wildlife Service
5275 Leesburg Pike, MS: EA
Falls Church, VA 22041-3803

703-358-2138 (direct)
571-319-6342 (cell)
vanessa_kauffman@fws.gov
Visit us online at: http://www.fws.gov

From: Juliette Fernandez
To: Bill Radke
Cc: julie_mcintyre@fws.gov
Subject: Fwd: [EXTERNAL] RE: [Non-DoD Source] Landowner meeting
Date: Tuesday, December 10, 2019 8:39:41 AM

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

Begin forwarded message:

> **From:** "Lester, Emily A CIV USARMY CESPL (USA)" <Emily.A.Lester@usace.army.mil>
> **Date:** December 10, 2019 at 8:37:21 AM MST
> **To:** Juliette Fernandez <juliette_fernandez@fws.gov>
> **Subject: [EXTERNAL] RE: [Non-DoD Source] Landowner meeting**
>
> Hello,
>
> Thank you for the email. The meeting on the 12th is solely for private landowners. The PM, Keely will be scheduling another agency meeting shortly. The agency meeting would be the one for your team to attend.
>
> Thank you,
>
> Emily
>
> Sent with BlackBerry Work
> (www.blackberry.com)
>
> ---
>
> **From:** Juliette Fernandez <juliette_fernandez@fws.gov>
> **Date:** Tuesday, Dec 10, 2019, 7:54 AM
> **To:** Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil>
> **Subject:** [Non-DoD Source] Landowner meeting
>
> Hi Emily,

On one of our past calls it was mentioned that there will be a meeting for landowners on December 12. Our local FWS folks have been asked if that is still happening. Do know when and where that will take place?

Is that something open to our local FWS personnel or is it intended solely for landowners?

Thank you,

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

From: Radke, Bill
To: Tasha Dolgoff; Harden, Victor
Subject: Fwd: [EXTERNAL] Re: New Border Infrastructure Impacts on Slaughter Ranch
Date: Wednesday, September 18, 2019 12:37:30 PM

FYI

---------- Forwarded message ---------
From: (b) (6) <(b) (6)>
Date: Wed, Sep 18, 2019 at 8:17 AM
Subject: [EXTERNAL] Re: New Border Infrastructure Impacts on Slaughter Ranch
To: Radke, Bill <bill_radke@fws.gov>, (b) (6) <(b) (6)>

Hi Bill:

This information on the further environmental impact on the San Bernardino Valley due to the wall construction is obviously very concerning. It's of even more concern to us here at the Ranch, as we did not receive the pond-filling monsoons this year, so we are already down about twelve inches from the normal pond level. As you know, we had been sparingly watering over the spring/summer to keep the pond level higher to mitigate the water vegetation growth (especially since we no longer have the supplement from the deep well), so this lower level is already rather frightening...and that's without this expected drain on the aquifer by DHS.

We did not plant the fields in agricultural seed this spring due to losing our old pump, but replanting was on the calendar for the third week of October (in fact, I was going to order seed this week). Obviously, due to the incredible amount of water this project is going to require, that project will have to be put on hold again. This will affect the Ranch monetarily, as this will mean the need to order more supplemental hay for our livestock.

Fred has brought up several concerns regarding environmental impact also (which is separate from the water issue): One being the lights on the "wall" drawing insects, which could possibly mean the bats that normally feed off the mosquito population around the ponds on the Refuge and Ranch would choose the easier meal swarming the lights; and, also there is a great concern over the trash the wall contractor is said to leave behind.

If there is anything we can do, other than visual water level monitoring, please let us know.

(b) (6)

From: Radke, Bill <bill_radke@fws.gov>
Sent: Wednesday, September 18, 2019 6:36 AM

To: (b) (6) <(b) (6)>
Cc: (b) (6) <(b) (6)>
Subject: New Border Infrastructure Impacts on Slaughter Ranch

Hi Allan; Perhaps you are already well aware of the pending border infrastructure that is being constructed across the San Bernardino Valley. A major concern is the extraordinary volume of water that will be pumped to support this construction activity (DHS - Department of Homeland Security - has reported expected volumes ranging between 83,000 - 700,000 gallons per day to support their concrete batch plant and road maintenance activities). The well contractors plan to use is the one just south of Geronimo Trail Road on the Malpai Ranch, just about 1.5-miles west of House Pond on Slaughter Ranch. While the Fish and Wildlife Service is currently working to try and model how such water use will impact the groundwater aquifer on the refuge and on Slaughter Ranch, there are many unknowns that are not being effectively analyzed by DHS. If you have information pertaining to expected water use, how that use may affect Slaughter Ranch domestic water supplies, or if you observe a decline in pond levels, water flow, etc., please provide me that information. It may help us develop a better risk assessment. I am attaching the risk assessment information developed for the Organ Pipe National Park area for your information. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Joaquin Baca; Tasha Dolgoff
Subject: Fwd: [EXTERNAL] Tucson Project 3: Groundwater Discussion and Coordination
Date: Tuesday, October 15, 2019 1:02:29 PM
Attachments: (b) (5)

Call in is : (b) (5) Code (b) (5) (Security (b) (5))

---------- Forwarded message ---------
From: **Brown, Keely N CIV USARMY CENWS (USA)** <Keely.N.Brown@usace.army.mil>
Date: Tue, Oct 15, 2019 at 11:44 AM
Subject: [EXTERNAL] Tucson Project 3: Groundwater Discussion and Coordination
To: Leemans, Adam J CPT USARMY ENGINEER SCHL (USA) <Adam.J.Leemans@usace.army.mil>, Ozuna, Victor SPK <Victor.Ozuna@usace.army.mil>, Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil>, (b) (6), (b) (7)(C) (b) (6), (b) (7)(C) >, Cook, Shawn M MAJ USARMY CENWO (US) <Shawn.M.Cook@usace.army.mil>, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >, bill_radke@fws.gov <bill_radke@fws.gov>

All –

This meeting is to discuss the use of groundwater in the vicinity of the San Bernandino Refuge.

The team will discuss the data previously provided, well locations, and the potential impacts.

Have a great day.

Keely Brown
Project Manager
TF Barrier
US Army Corps of Engineers
Keely.N.Brown@usace.army.mil
Mobile: (843) 478-6966

********** This information is For Official Use Only. The contents of this email, including any attachments, must not be disclosed, directly or indirectly, to any person not authorized by the agency to receive such information. Unauthorized disclosure of such information may subject the individual making the release to civil and criminal penalties. See, e.g., 18 U.S.C. § 641; 5 C.F.R. § 2635.703. **********

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Tasha Harden
To: Bill Radke
Subject: Fwd: [EXTERNAL] Water
Date: Friday, December 6, 2019 3:00:39 PM

Bill
See Chucks question below, I told him it's not public info yet to my knowledge but that'd I let you know he is asking.

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

Begin forwarded message:

From: (b) (6) <(b) (6)>
Date: December 6, 2019 at 11:43:10 AM MST
To: "Harden, Tasha" <tasha_harden@fws.gov>
Subject: [EXTERNAL] Water

Hi Tasha:

(b) (6) just told me about the water drop in the ponds at the refuge. Is that information "public knowledge" or still in your files? I was going to contact the Arizona Sonora Desert Museum about re-establishing the Yaqui fishes there, but then thought it might be inappropriate to mention the water drop. Please advise. . . . is it public knowledge yet?

Thanks,

Chuck

(b) (6)

From:	Bill Radke
To:	Tasha Dolgoff; cassondra_walker@fws.gov; Scott Harden
Subject:	Fwd: [EXTERNAL] Webster with notes
Date:	Thursday, October 24, 2019 8:12:46 AM
Attachments:	SBNWR Notes for 102219.pdf Untitled attachment 04603.html

---

FYI

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

From: Merlin <(b) (6) >
Date: October 23, 2019 at 8:39:19 AM MST
To: Bill Radke <Bill_Radke@fws.gov>
Subject: [EXTERNAL] Webster with notes

Dear Bill:

Enclosed.

A few more birds of winter sorts, but still pretty bad.

Nothing rare. A few odds and ends for the refuge or the date: Hutton's Vireo (Black Draw), Black Vulture (5), N Beardless-Tyrannulet (Slaughter Ranch), American Goldfinch, and Townsend's Warbler.

I talked Cassandra and saw someone else working on mesquites (I assume Monty), so you had folks out there as well. I have nothing to add except a couple of Border Stories.

<!--[if !supportLists]-->1) <!--[endif]--> Along the border road just west of Black Draw I encountered two sullen workers calling for help. A bulldozer towing a caterpillar-treaded trailer had "jackknifed" across the road as the driver was trying to turn it around. I thought to myself that it has always been smart of me not to buy a trailer of any kind. It could not go forward (the border barrier) or backward (the refuge's interior barrier), and was stuck blocking the road. One looked at it and wondered how it had gotten into that position, but it was probably very easy. Anyway, brace yourself for a request to take out the inner barrier somewhere to have a better turn-around spot!

<!--[if !supportLists]-->2) <!--[endif]-->As I was leaving I stopped to take a couple of photos of the construction yard (where they are starting to assemble 30'

fence panels), and a vehicle headed out the main road stopped, and I recognized (b) (6) and (b) (6), who did not recognize me (understandable). They started talking about how tax dollars were paying for all of this, and how the government had just taken over the land, etc. I eventually said something like "but this is your land, isn't it?" and they said yes, and after listening to them a little longer I said "And that is your water that they are using, right?," and they said yes it was. This was followed by something I did not understand along the lines of "we had a conservation easement on our land, which we shouldn't have, but we are getting it straightened out and we are hoping that the Government will do right by us." It sounded to me like the (b) (6) were trying to have their cake and eat it, too. I had heard a couple of grumbles from local residents about how the (b) (6) had sold out, particularly the well. I don't know the facts, but if there is one thing on which I would bet, those big construction companies involved in this project did not put in that construction yard or get started on this project without having firm rights to what they are using and what they need.

We are going away next week—probably will not be back to the refuge for 5-6 weeks. Hang in there!

(b) (6)

From:	Radke, Bill
To:	McIntyre, Julie; Juliette Fernandez; Tasha Dolgoff
Subject:	Fwd: Additional Contractor Water Withdrawal at SBNWR
Date:	Thursday, December 12, 2019 10:03:23 AM

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Thu, Dec 12, 2019 at 9:58 AM
Subject: Additional Contractor Water Withdrawal at SBNWR
To: Juliette Fernandez <juliette_fernandez@fws.gov>, McIntyre, Julie <julie_mcintyre@fws.gov>

Juliette and Julie; I just wanted to notify you both that, in spite of what we keep hearing from USACE and DHS about enforcing water withdrawal buffers around SBNWR, yesterday, refuge staff spoke to contractors who were plumbing another one of the Glenn's existing wells to enable additional water withdrawal for border infrastructure construction. This is the Glenn's Hay Hollow Windmill Well, located about 1,706 feet north of the refuge and about 2,777 feet from currently occupied refuge wetland habitat (critical habitat). On the attached map, this is the location of the star on the northeast edge of the refuge. We have all previously spoken about avoiding the sensitivity of this location, and I thought we had assurances this would not happen. Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Baca, Joaquin
To: Steven Sesnie
Subject: Fwd: attachment
Date: Tuesday, January 14, 2020 6:32:40 AM
Attachments: SBNWR_Ponds.zip

---------- Forwarded message ---------
From: **Walker, Cassondra** <cassondra_walker@fws.gov>
Date: Mon, Jan 13, 2020 at 3:10 PM
Subject: Re: attachment
To: Harden, Tasha <tasha_harden@fws.gov>
Cc: Baca, Joaquin <joaquin_baca@fws.gov>

Here is the pond shapefile that you can use to find the locations of Bath House and Twin 2. I believe this shapefile was digitized from 2013 NAIP imagery at 1m spatial resolution.

On Mon, Jan 13, 2020 at 1:42 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> There are two ponds at #13
> There is a second pond at #21, twin 2
> And Bath house pond is missing
> If he is doing riparian areas that typically hold water there are a couple other areas to include... I will include what once was at hay hollow draw even though it is now gone...
>
> If I need to digitize all this in GIS just let me know.
>
> Cass if you see anything else I missed let us know
>
> On Mon, Jan 13, 2020 at 12:24 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> > ---------- Forwarded message ---------
> > From: **Sesnie, Steven** <steven_sesnie@fws.gov>
> > Date: Mon, Jan 13, 2020 at 9:45 AM
> > Subject: attachment
> > To: Joaquin Baca <joaquin_baca@fws.gov>, Grant Harris <Grant_Harris@fws.gov>
> >
> > Sorry, here is the attachment.
> >
> > --
> > Steven E. Sesnie, Ph.D.
> > Spatial Ecologist
> > U.S. Fish & Wildlife Service
> > Southwest Region
> > P.O. Box 1306
> > Albuquerque, NM 87103-1306
> > 505-248-6631 office

505-280-9903 cell
505-248-6460 fax
Webpage: https://southwestnwrsnatresources.wordpress.com/biological-sciences/steven-e-sesnie-ph-d/

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--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
Tasha Harden
Assistant Manager

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Cell: 520-368-6004
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--
Cassondra Walker, PhD
US Fish and Wildlife Service
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--
Joaquin Baca
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www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Bill Radke
To: Juliette Fernandez; steve_reagan@fws.gov; grant_harris@fws.gov; joaquin_baca@fws.gov; Julie McIntyre
Subject: Fwd: black draw crossing structure as of 01-13-2020
Date: Monday, January 13, 2020 2:51:41 PM

All. FYI - This concrete block in Black Draw will back up water on the refuge and create additional problems. Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

> **From:** "Harden, Tasha" <tasha_harden@fws.gov>
> **Date:** January 13, 2020 at 1:35:27 PM MST
> **To:** Bill Radke <bill_radke@fws.gov>
> **Subject: black draw crossing structure as of 01-13-2020**
>
> Cass was told it was completed on the 10th, by an environmental consultant she met while there taking pics. The consultant told Cass that the environmental person who was supposed to be present for construction didn't even know about it, she just happened to come out and see it.
>
> --
> Tasha Harden
> Assistant Manager
>
> San Bernardino & Leslie Canyon NWRs
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104 x106
> Cell: 520-368-6004
> Fax: 520-364-2130

HDSUPPLY

From: Baca, Joaquin
To: Burck, Peter
Subject: Fwd: border wall wells info
Date: Tuesday, November 5, 2019 9:20:32 AM

---------- Forwarded message ---------
From: **Bill Radke** <bill_radke@fws.gov>
Date: Tue, Nov 5, 2019 at 7:10 AM
Subject: Re: border wall wells info
To: Baca, Joaquin <joaquin_baca@fws.gov>
Cc: Juliette Fernandez <juliette_fernandez@fws.gov>, <steve_reagan@fws.gov>, <julie_mcintyre@fws.gov>

Joaquin; I appreciate your help. I am frustrated by the continuing requests to run numbers in our model without also providing us adequate information. Their email chain dismisses our earlier analyses, identifies no better option, requests another quick response from the Service, and still doesn't provide us the necessary information to complete an accurate risk analysis. We need to know details like: how many days do they pump water each week, whether their 322 day time frame is work days or project period, which wells they are using, what is the timing of withdrawals and are the withdrawals simultaneous, where are their various wells located, etc. Before we keep responding to their requests we need to have all of the necessary information.

I think it is appropriate at this point to itemize all the information we need from DHS/USACE and run our model once we have all that information. The request to DHS/USACE for this information should come from Amy, Aaron, Steve, Juliette, or someone besides you and me. Tell me what you think. Thanks, Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Nov 4, 2019, at 11:07 AM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Bill,
>
> I will start reworking the numbers, although this is a different situation than was previously modeled. Previously we were working with drawdown from 1 well using multiple numbers provided by CBP. While we did our best to provide accurate numbers for multiple scenarios, it was difficult to get a perfect answer given the limitations of the information provided to us. That said, the numbers we modeled were not outside the bounds of what would be considered reasonable.
>
> For the new model, per Mr. Gar, we now need to show cumulative effects from multiple wells, while taking into account that not all wells will be running simultaneously. While that makes sense from a logistical standpoint, Mr Gar has not provided us a schedule of which of the 5 wells will be pumping and

when. I have several questions, but will limit it to 3. While he states we should not assume all wells will be running at the same time, will two or more wells be running simultaneously? Will only 1 well per day be used? What is the location of the Quarry Well and the Rocker Ranch Well?

I realize you may not be able to provide these answers, I think for now just the location of the two other wells would help so I can determine if I need to factor them into the model.

Thank you

On Mon, Nov 4, 2019 at 6:25 AM Radke, Bill <bill_radke@fws.gov> wrote:

> All; I am forwarding you the email and information from Tasha Harden which provides GPS and/or mapped locations of the wells that DHS contractors are/will be withdrawing water from in support of their border infrastructure construction. From west to east, the wells depicted on the map are: "Milepost 9 Well" within the Roosevelt Easement about 4.8 miles west of SBNWR; "Glenn Well" on private property about 1.6 miles west of SBNWR; "Mile Marker 18 Well" on state trust land north of the Roosevelt Easement about 450 feet east of SBNWR.
>
> These are the three wells that will need to be used in our analysis of the impacts to SBNWR from water withdrawal amounting to a DHS/USACE identified volume of at least 102,000 gallons per day (200,000 gallons per day peak use, 150,000 gallons per day average use for a 5-day work week) over a 322 day time period. In their email to the FWS dated November 1 2019, DHS/USACE only provided water withdrawal information pertinent to the Glenn Well and the Mile Marker 18 Well, and has not divulged any information pertinent to the Milepost 9 Well. They have not identified whether the 322 day project period identifies actual work days or the contract period. So we are still left guessing what the cumulative impacts will be from this project. The water use numbers they provided are:
>
> 200,000 gallons per day peak use.
> 750,000 gallons per week (about 150,000 gallons per day average use for a five day work week).
> Total projected withdrawal from the Glenn Well is 14,000,000 gallons (72,000 gallons per day maximum usage).
> Total projected withdrawal from the Mile Marker 18 Well is 5,000,000 gallons (30,000 gallons per day maximum use).
>
> While I cannot speak to the accuracy of these latest estimates, this is the most recent information that has been made available to FWS.
>
> ---------- Forwarded message ---------
> From: **Harden, Tasha** <tasha_harden@fws.gov>
> Date: Fri, Nov 1, 2019 at 1:05 PM
> Subject: border wall wells info
> To: Bill Radke <bill_radke@fws.gov>

Attached are a couple pics showing all 3 wells in relation to the refuge and one showing how close the eastern well is to our boundary.

The GPS coords area;
Eastern well: 31.334364 109.228989
Western well: 31.334142 109.366205

let me know if you'd like anything else on this for now.

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
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--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
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www.facebook.com/USFWS Water Resources

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: McIntyre, Julie
To: Bill Radke
Subject: Fwd: brief notes from CBP call
Date: Wednesday, November 13, 2019 11:50:11 AM

FYI

---------- Forwarded message ---------
From: **Fernandez, Erin** <erin_fernandez@fws.gov>
Date: Wed, Nov 13, 2019 at 10:46 AM
Subject: brief notes from CBP call
To: McIntyre, Julie <julie_mcintyre@fws.gov>, Sid Slone <sid_slone@fws.gov>

Hi Julie and Sid,
Below are my brief notes from the CBP call today....

-Juliette (FWS refuges) said that they are going to be meeting next week with ACOE (I think) to discuss the well issue. Joaquin and hopefully Bill will make the mtg. I asked if ES is attending and if she would reach out to you to coordinate.

-Juliette said that she is going to be providing wildlife passage and cultural info from CPNWR to CBP/ACOE. I asked if she could copy us.

-I asked if Paul (Paul wasn't on the call) or others were still going to be able to provide us information or a letter on 2808 funding and the laws waived under 2808. CBP is still working on getting this information, but told us the statute is 10USC2808. Laws aren't exactly waived under 2808, rather it says something like under an emergency, DOD has authorization to proceed expeditiously

-Brent asked why we needed such documentation and that he didn't want to create extra work for people. I told him that we needed to know under what authority section 7 is being bypassed and that we'd like some sort of official correspondence (letter or email) to document that for our records.

- The CBP person said that the letter or email would come from DOD, not CBP, and that they will continue to work to get us something.

-BLM and Brent suggested that we may just have to work with our solicitors to interpret and document the legal aspect of the projects

---

Erin Fernandez
Fish and Wildlife Biologist/Mexico Program Coordinator
U.S. Fish and Wildlife Service
Arizona Ecological Services Office
201 North Bonita Avenue, Suite 141

Tucson, Arizona 85745
(520) 670-6150, extension 238
(520) 670-6155 (fax)
http://www.fws.gov/southwest/es/arizona/

--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: Baca, Joaquin
To: Darrell Kundargi; Ariel MacMillan
Subject: Fwd: CBP Conference call on water use along border in AZ - Tues 3-4 AZ time (tomorrow!)
Date: Monday, August 19, 2019 3:43:06 PM

---------- Forwarded message ---------
From: **McIntyre, Julie** <julie_mcintyre@fws.gov>
Date: Mon, Aug 19, 2019 at 2:11 PM
Subject: CBP Conference call on water use along border in AZ - Tues 3-4 AZ time (tomorrow!)
To: Bill Radke <bill_radke@fws.gov>, Sid Slone <sid_slone@fws.gov>, Joaquin Baca <joaquin_baca@fws.gov>, Fernandez, Juliette <juliette_fernandez@fws.gov>, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C)>, Range, Brent <brent_range@ios.doi.gov>, Vitulano, Karen <Vitulano.Karen@epa.gov>, <pimentel.emily@epa.gov>, Rijk Morawe <rijk_morawe@nps.gov>, Shafiqullah, Salek <salek_shafiqullah@nps.gov>, Daniel Martin <daniel_j_martin@nps.gov>, Scott Stonum <scott_stonum@nps.gov>, Scott Richardson <scott_richardson@fws.gov>, Cat Crawford <cat_crawford@fws.gov>, Doug Duncan <doug_duncan@fws.gov>, Erin Fernandez <erin_fernandez@fws.gov>, Alanen, Marit <marit_alanen@fws.gov>, Jason Douglas <jason_douglas@fws.gov>, Sferra, Susan <susan_sferra@fws.gov>

Hi All,

Apologies for little notice on this call (tomorrow, Tuesday, Aug 20, 3-4 pm AZ time), but have been coordinating with a few of you already, and there seems to be a need to understand more about CBP's expectations pertaining to the amount of water needed for border project use in southern Arizona.

More details on the amount/day, timing of use daily and seasonally, duration of use at particular levels, sources (wells vs trucking in, where trucks will fill up, etc), hydrology, geology, groundwater impacts, watershed impacts, nearby wells, use limits, monitoring, nearby gauges, etc seem to be of great interest, and would assist with understanding effects and potentially with minimizing or mitigating effects.

Will send a google invite out as well. Please use the following:
Phone: (b) (5)
Passcode: (b) (5)

If you are unable to attend this call, we will likely have more discussions on the topic of water and its impacts to habitats and species, so let us know if you would like additional calls.

Thanks,
Julie

--
Julie McIntyre, Ph.D.
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Pollinator Coordinator, Southwest Region (R2)

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Fax #: 520.670-6155

"Learn More About Endangered Species Conservation in the Southwest!"

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From:	Bill Radke
To:	Juliette Fernandez; sid_slone@fws.gov
Subject:	Fwd: Collated submission for small passages in border barrier maps; summary table attached
Date:	Friday, November 8, 2019 9:01:11 AM
Attachments:	mime-attachment.html Untitled attachment 03090.html DOI SBNWR East.jpg Untitled attachment 03093.html DOI SBNWR West.jpg Untitled attachment 03096.html mime-attachment.html Untitled attachment 03099.html DOI SPRNCA.jpg Untitled attachment 03102.html mime-attachment.html Untitled attachment 03105.html crossing_summary_table.xlsx Untitled attachment 03108.html mime-attachment.html Untitled attachment 03111.html

---

Juliette and Sid; FYI, this is how we responded to the wildlife passage quick turnaround request back in September relative to the border infrastructure construction. Maybe this helps, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

> **From:** Julie McIntyre <julie_mcintyre@fws.gov>
> **Date:** September 26, 2019 at 3:10:48 PM MST
> **To:** brent_range@ios.doi.gov
> **Subject: Fwd: Collated submission for small passages in border barrier maps; summary table attached**
>
> Hi Brent, just wanted you to know that ES was significantly involved in this work, and we were the ones who reached out, coordinated, and collated the locations we received from San Bernardino, SPRNCA and BLM. Bill Radke's staff and Marcia Radke for SPRNCA both took this Quick assignment to heart, and went on the ground and collected accurate data, while BLM did a GIS exercise based on satellite photos. I was actually in discussions with Julie Valentine, Mark McCabe's supervisor, when Mark prematurely sent out the email. Julie and I were discussing who should send it out, as I was advocating for ES to send it out as the neutral party.
> Of note is no mention of ecological services, although we probably did the most mapping and Collaborating work.
>
> Just wanted to keep you in the loop, and thank you so much for your support
> Julie
> Sent from my iPhone

Begin forwarded message:

From: "McIntyre, Julie" <julie_mcintyre@fws.gov>
Date: September 26, 2019 at 1:20:21 PM MST
To: "Mccabe, Mark" <mmccabe@blm.gov>, Bill Radke <bill_radke@fws.gov>, Julie Valentine <jvalentine@blm.gov>, Allen Etheridge <allen_s_etheridge@nps.gov>, Marcia Radke <mradke@blm.gov>, Scott Richardson <scott_richardson@fws.gov>, Cat Crawford <cat_crawford@fws.gov>, Erin Fernandez <erin_fernandez@fws.gov>, "Alanen, Marit" <marit_alanen@fws.gov>
Subject: Collated submission for small passages in border barrier maps; summary table attached

Hello Mark and All,

Mark thank you so much for sending this on, on behalf of us all to DHS. Tried to reach you this morning several times for your final approval, and understand if you need to make final changes.

Please find below the collective locations for 30 Priority 1 small passages and 13 additional Priority 2 suggested locations along the AZ-Mexico border from Coronado National Memorial eastward to near the NM state line. Thank you to Mark McCabe, Bill Radke, and Marcia Radke for their location submissions for BLM lands, San Bernardino NWR, and SPRNCA passage locations. Locations on Coronado were donated to other spots along the border, based on Allen's feedback.

Thanks to Cat Crawford for pulling this information together! She has provided the google link if the maps are too cumbersome: https://drive.google.com/open?id=1yP-S3jTUqxCLVnlq2uhSF60pG4pUj6Gm

If you have any questions, please feel free to call me on my cell: 602.525.4470. Cat is also around to address any technical issues.

Thanks for everyone's help!
Julie

---------- Forwarded message ---------
From: **Crawford, Cat** <cat_crawford@fws.gov>
Date: Thu, Sep 26, 2019 at 1:04 PM
Subject: border cat door maps and summary table attached
To: McIntyre, Julie <julie_mcintyre@fws.gov>

From:	Bill Radke
To:	Juliette Fernandez; julie_mcintyre@fws.gov; joaquin_baca@fws.gov
Cc:	Tasha Dolgoff
Subject:	Fwd: Distances
Date:	Friday, November 22, 2019 11:43:02 AM
Attachments:	image3.png image0.png image1.png image2.png image4.png image5.png image6.png image7.png

---

Juliette and others;

Tasha Harden developed the attached maps yesterday, upon hearing from landowner (b) (6) that contractors are telling her they will be developing new wells north of the refuge.

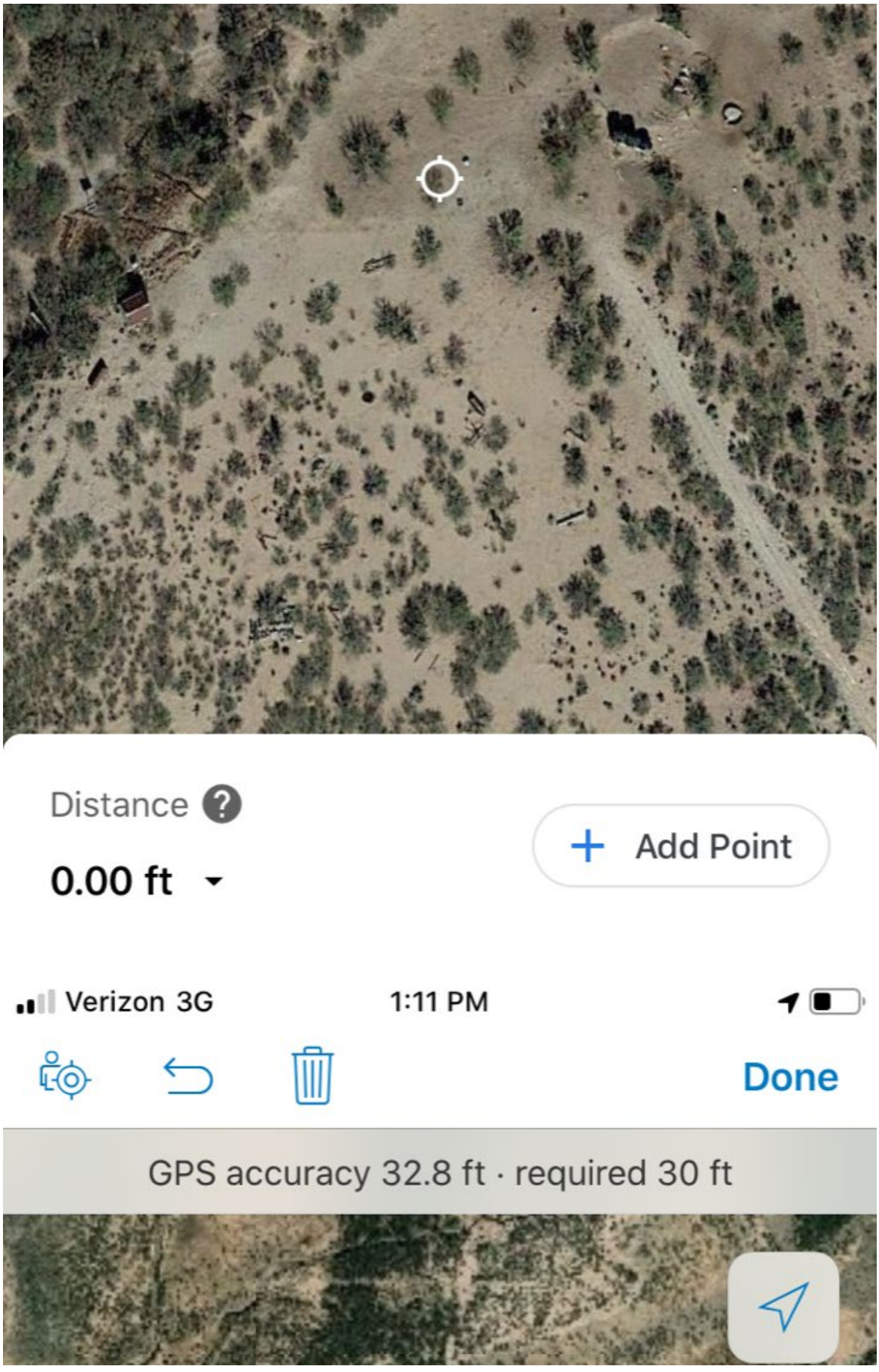
These are the mapped locations that DHS contractors have identified for the wells north of the refuge. Individual maps identify the distance from the San Bernardino NWR boundary, and also the distance from the closest SBNWR well that supports endangered species.

Thanks, Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

From: Tasha Harden <tasha_harden@fws.gov>
To: Bill Radke <bill_radke@fws.gov>
Subject: Distances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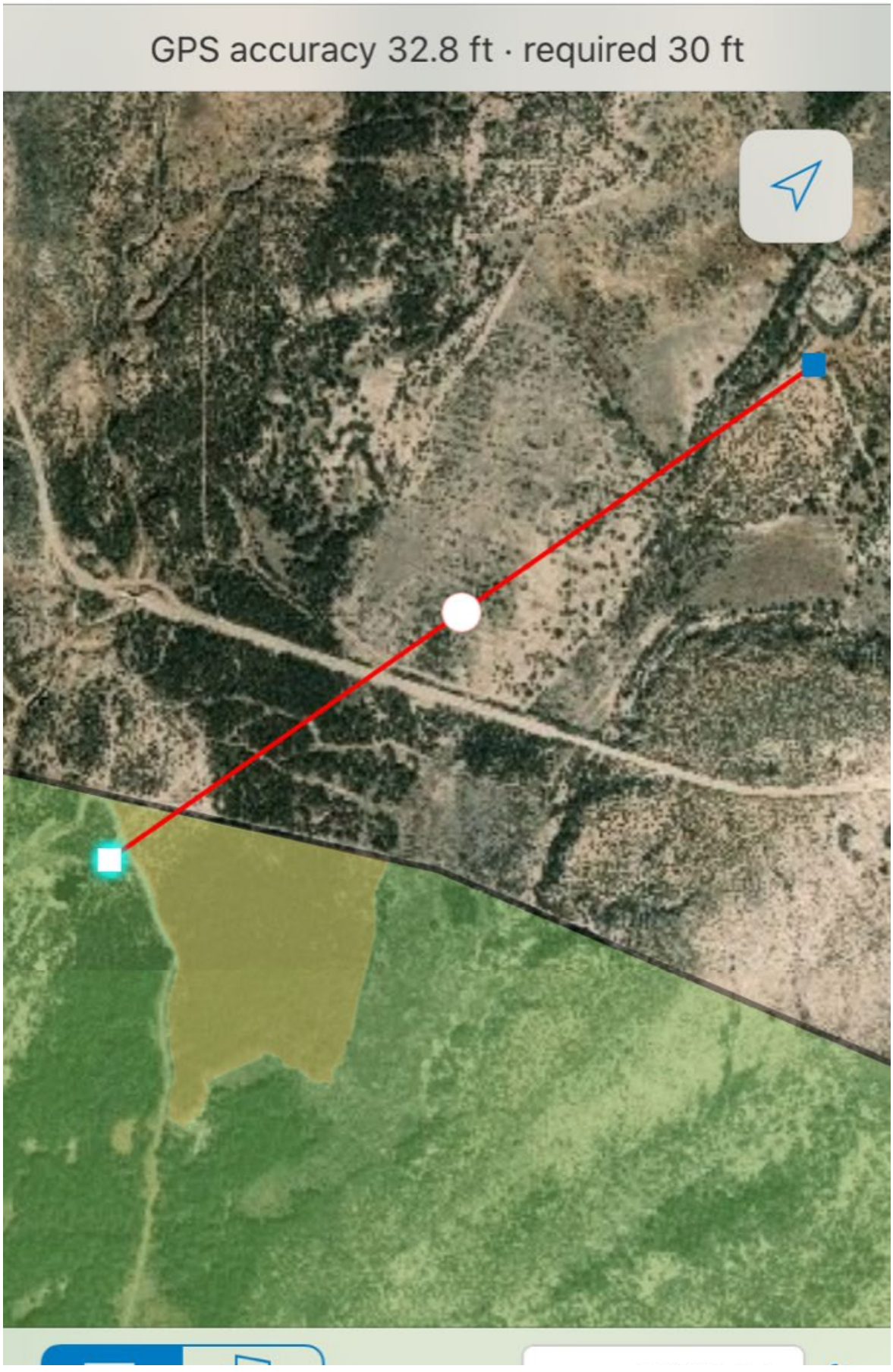
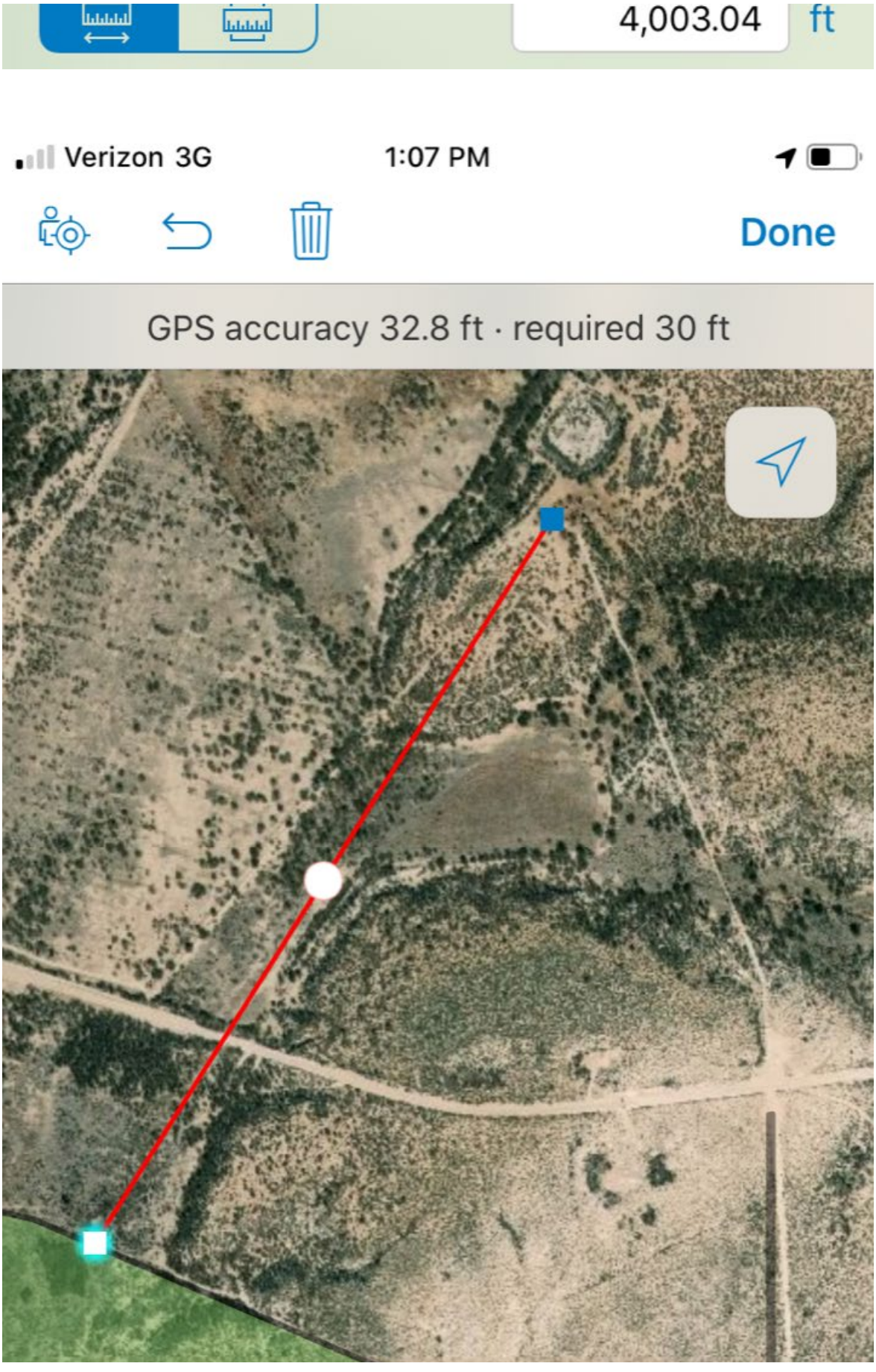
Verizon 3G
1:11 PM
Done
GPS accuracy 32.8 ft · required 30 ft

Verizon 3G 1:11 PM

Done


GPS accuracy 32.8 ft · required 30 ft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Verizon 3G
1:07 PM
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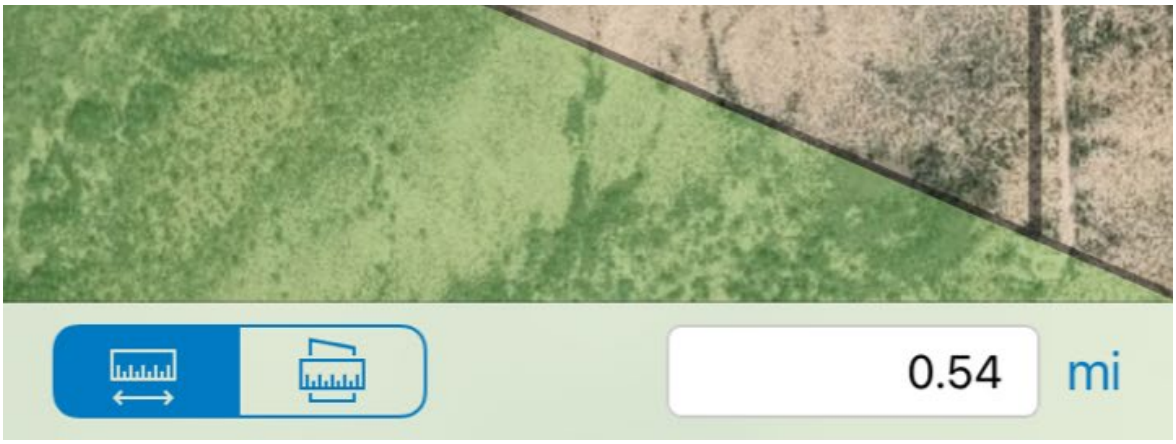
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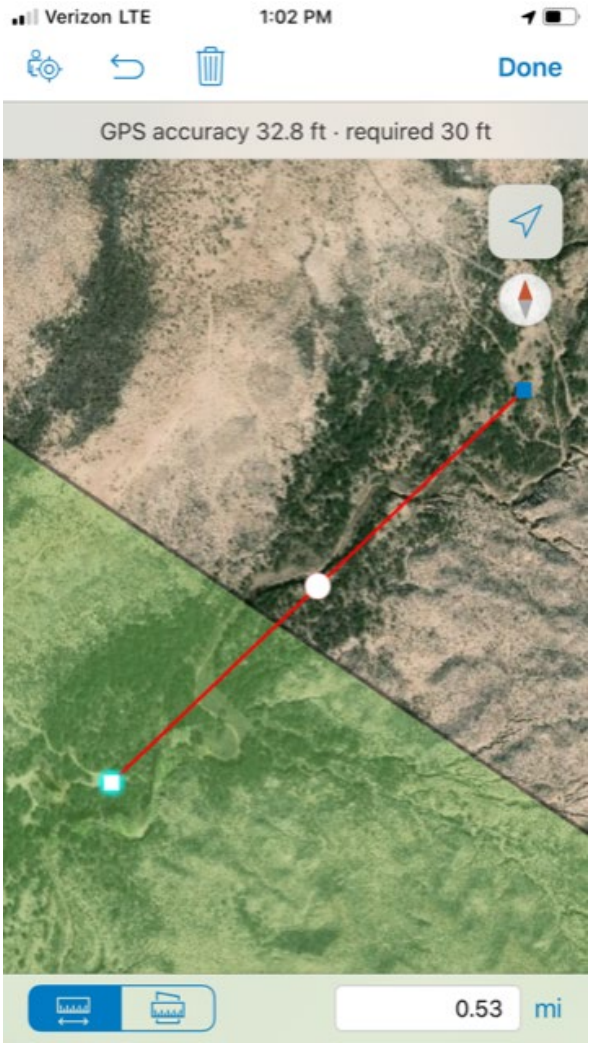
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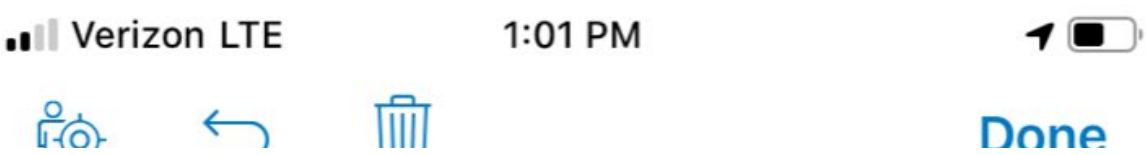
0.53
mi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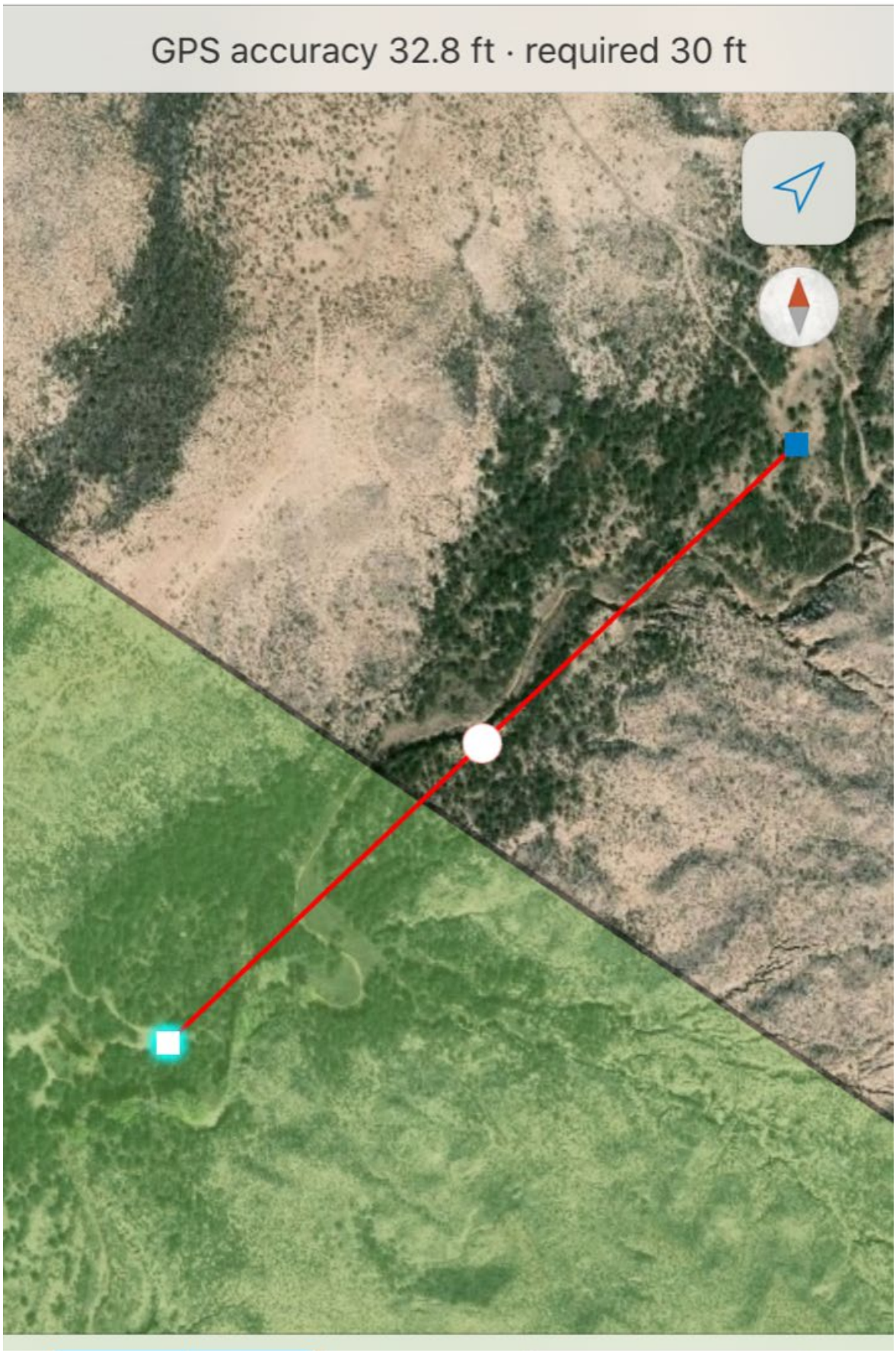
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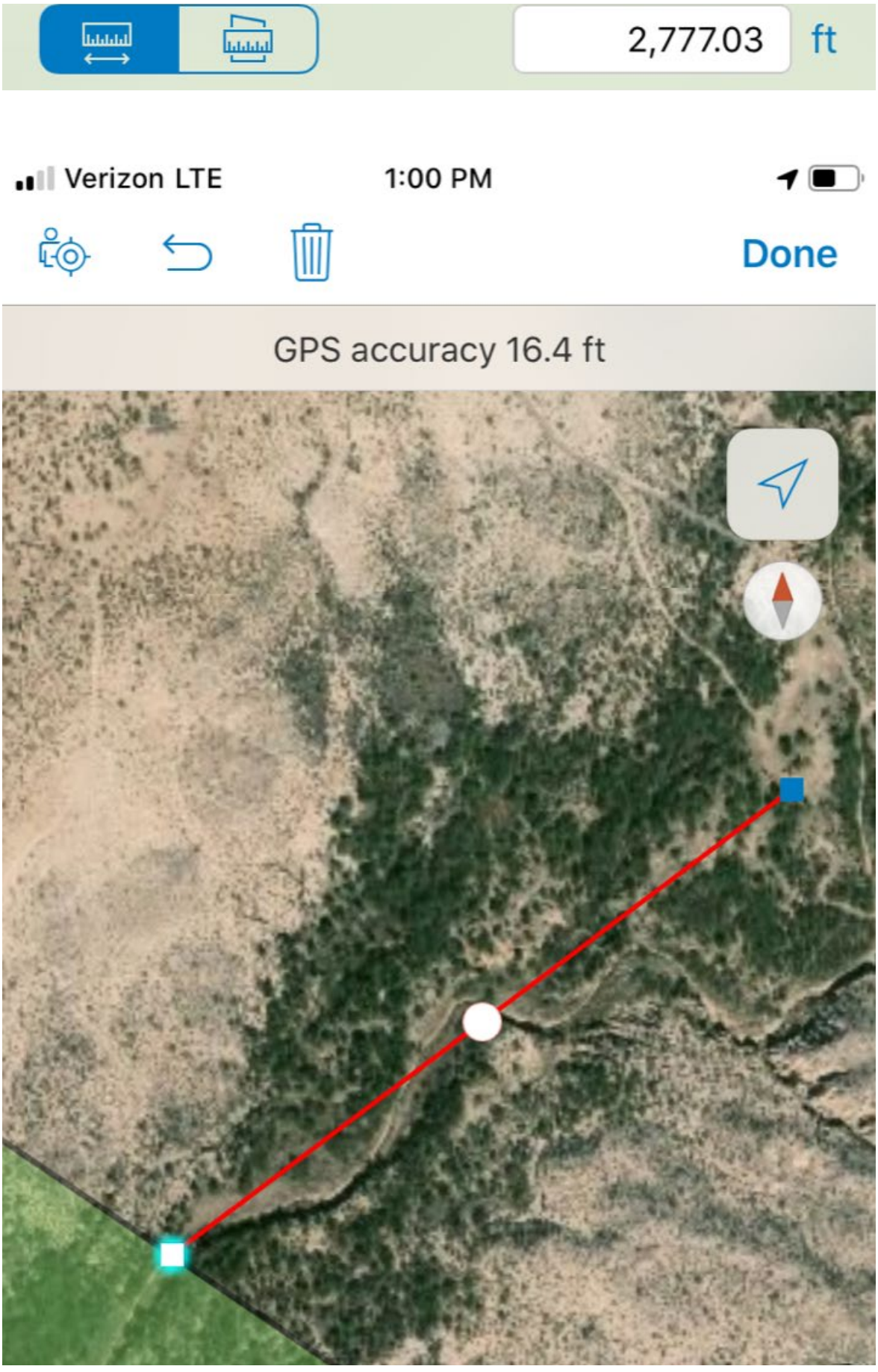
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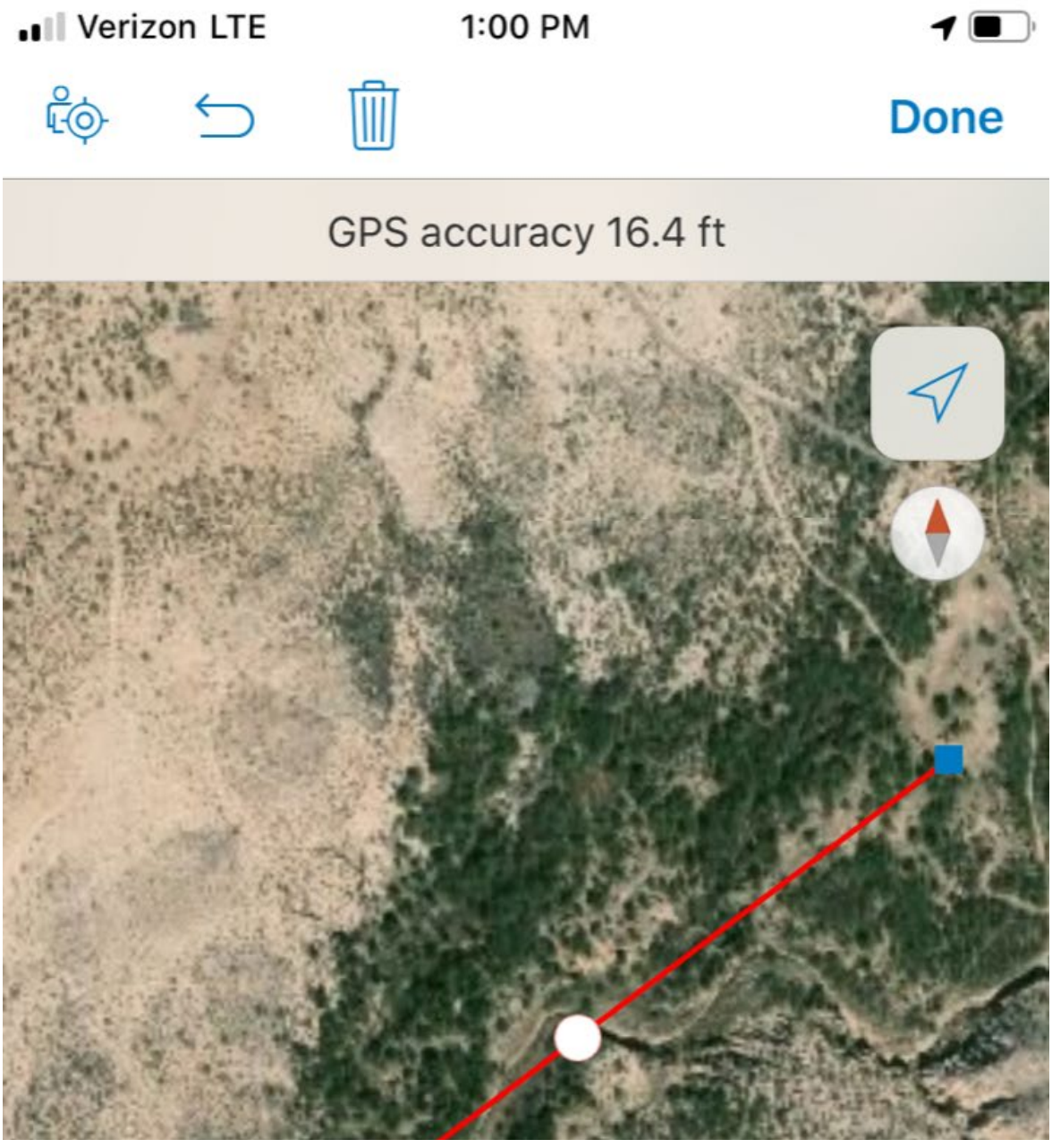
Verizon LTE
1:00 PM
Done
GPS accuracy 16.4 ft

1,706.32
ft


Verizon LTE
1:00 PM
Done
GPS accuracy 16.4 ft

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

From: Baca, Joaquin
To: Tasha Dolgoff; Cassondra Walker
Subject: Fwd: Estimated water bodies for SBNWR
Date: Monday, January 13, 2020 12:24:04 PM

Morning,

Can you take a look at the attached map and verify that all the ponds are included. Steve was unsure about a couple of locations. The next step will be verifying pond footprints, but we can discuss that at a later date.

Thank you
---------- Forwarded message ---------
From: **Sesnie, Steven** <steven_sesnie@fws.gov>
Date: Mon, Jan 13, 2020 at 9:42 AM
Subject: Estimated water bodies for SBNWR
To: Joaquin Baca <joaquin_baca@fws.gov>, Grant Harris <Grant_Harris@fws.gov>

Hi Joaquin and Grant,
Here are estimates of water body surface area from hand digitizing them from a 3m dem, hillshade and NAIP imagery. There are also stream channel models overlaying the imagery from taudem hydro models, this one using D8 (8 flow directions), which is good for defining principal washes and channels from the surrounding contributing area. I've added a bar graph showing the area for each mapped waterbody that corresponds to the map label (Id).

The .pdf is georeferenced, so it can be used in Avenza or ArcGIS if needed.

Best,
Steve

--
Steven E. Sesnie, Ph.D.
Spatial Ecologist
U.S. Fish & Wildlife Service
Southwest Region
P.O. Box 1306
Albuquerque, NM 87103-1306
505-248-6631 office
505-280-9903 cell
505-248-6460 fax
Webpage: https://southwestnwrsnatresources.wordpress.com/biological-sciences/steven-e-sesnie-ph-d/

Call
Send SMS
Add to Skype
You'll need Skype CreditFree via Skype

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Radke, Bill
To: Juliette Fernandez
Subject: Fwd: Glen Hay Hollow Windmill Well 12/13/19
Date: Monday, December 16, 2019 8:44:28 AM

Hi Juliette; Attached are pictures taken by Biologist Cassondra Walker on Friday 12/13, of the DHS contractors tapped into the Glenn Ranch Windmill Well located near the Northeast border of SBNWR, for water withdrawal. Perhaps this issue is now resolved, as I had a phone call from Brent Range on Friday explaining that the issue was due to a miscommunication ("contractor never got the information") that we were requesting a 5-mile buffer from the refuge boundary. He stated DHS/USACE's intention to honor their agreement to not impact the refuge, and that contractors would be dismantling the associated water withdrawal infrastructure. Thank you for helping us resolve this issue, Bill Radke

---------- Forwarded message ---------
From: **Walker, Cassondra** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 6:52 AM
Subject: Glen Hay Hollow Windmill Well 12/13/19
To: Radke, Bill <bill_radke@fws.gov>, Harden, Tasha <tasha_harden@fws.gov>

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist

San Bernardino and Leslie Canyon NWR

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7628 N Hwy 191
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--
William R. Radke; Project Leader
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P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Fernandez, Juliette
To: Range, Brent K
Subject: Fwd: Glen Hay Hollow Windmill Well 12/13/19
Date: Monday, December 16, 2019 8:47:04 AM

Juliette Fernandez
Refuge Supervisor AZ/NM

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505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Mon, Dec 16, 2019 at 8:44 AM
Subject: Fwd: Glen Hay Hollow Windmill Well 12/13/19
To: Juliette Fernandez <juliette_fernandez@fws.gov>

Hi Juliette; Attached are pictures taken by Biologist Cassondra Walker on Friday 12/13, of the DHS contractors tapped into the Glenn Ranch Windmill Well located near the Northeast border of SBNWR, for water withdrawal. Perhaps this issue is now resolved, as I had a phone call from Brent Range on Friday explaining that the issue was due to a miscommunication ("contractor never got the information") that we were requesting a 5-mile buffer from the refuge boundary. He stated DHS/USACE's intention to honor their agreement to not impact the refuge, and that contractors would be dismantling the associated water withdrawal infrastructure. Thank you for helping us resolve this issue, Bill Radke

---------- Forwarded message ---------
From: **Walker, Cassondra** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 6:52 AM
Subject: Glen Hay Hollow Windmill Well 12/13/19
To: Radke, Bill <bill_radke@fws.gov>, Harden, Tasha <tasha_harden@fws.gov>

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Juliette Fernandez
Subject: Fwd: Hay Hollow crossing 12/16/19
Date: Tuesday, December 17, 2019 7:07:03 AM

Hi Juliette; Regarding our communications about the Hay Hollow Wash Crossing constructed by DHS contractors just upstream from SBNWR in support of their ongoing border infrastructure project, Biologist Walker visited the area yesterday and provided the following pictures. Contractors recently (this week) "repaired" the washed out crossing by simply piling more soil into the wash to replace all that was previously washed downstream into critical habitat on SBNWR back in late November. Additionally, they "armored" the loose soil roadway with rock rip-rap. This will likely last until the next flood event washes it away again. This will be a continual problem for the downstream refuge land and critical habitat for endangered fish until it is correctly addressed and engineered to sustain the large flood events that frequent this drainage. Any work the FWS accomplishes on the downstream refuge, to repair all of the previously damaged refuge infrastructure, will be at continued risk of repeated damage/loss due to this inadequate upstream crossing. Thank you, Bill Radke

---------- Forwarded message ---------
From: **Cassondra Walker** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 3:34 PM
Subject: Hay Hollow crossing 12/16/19
To: <bill_radke@fws.gov>, <tasha_harden@fws.gov>

Cassondra Walker, PhD
US Fish and Wildlife Service
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From: Fernandez, Juliette
To: Range, Brent K
Subject: Fwd: Hay Hollow crossing 12/16/19
Date: Tuesday, December 17, 2019 7:32:25 AM

FYI. They have built the dirt berms back up but this may need to be more thoroughly engineered by the corps if it will hold up to future flood events. Let me know if you want to chat about it.

Juliette Fernandez
Refuge Supervisor AZ/NM

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505-248-6460 Fax

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P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Tue, Dec 17, 2019 at 7:07 AM
Subject: Fwd: Hay Hollow crossing 12/16/19
To: Juliette Fernandez <juliette_fernandez@fws.gov>

Hi Juliette; Regarding our communications about the Hay Hollow Wash Crossing constructed by DHS contractors just upstream from SBNWR in support of their ongoing border infrastructure project, Biologist Walker visited the area yesterday and provided the following pictures. Contractors recently (this week) "repaired" the washed out crossing by simply piling more soil into the wash to replace all that was previously washed downstream into critical habitat on SBNWR back in late November. Additionally, they "armored" the loose soil roadway with rock rip-rap. This will likely last until the next flood event washes it away again. This will be a continual problem for the downstream refuge land and critical habitat for endangered fish until it is correctly addressed and engineered to sustain the large flood events that frequent this drainage. Any work the FWS accomplishes on the downstream refuge, to repair all of the previously damaged refuge infrastructure, will be at continued risk of repeated damage/loss due to this inadequate upstream crossing. Thank you, Bill Radke

---------- Forwarded message ---------
From: **Cassondra Walker** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 3:34 PM
Subject: Hay Hollow crossing 12/16/19
To: <bill_radke@fws.gov>, <tasha_harden@fws.gov>

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
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William R. Radke; Project Leader
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Fernandez, Juliette
To: Range, Brent K
Subject: Fwd: Hay hollow gabion
Date: Tuesday, December 17, 2019 7:30:35 AM

Some more photos of the damage after the road crossing gave out.

Juliette Fernandez
Refuge Supervisor AZ/NM

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Albuquerque, NM 87103-1306

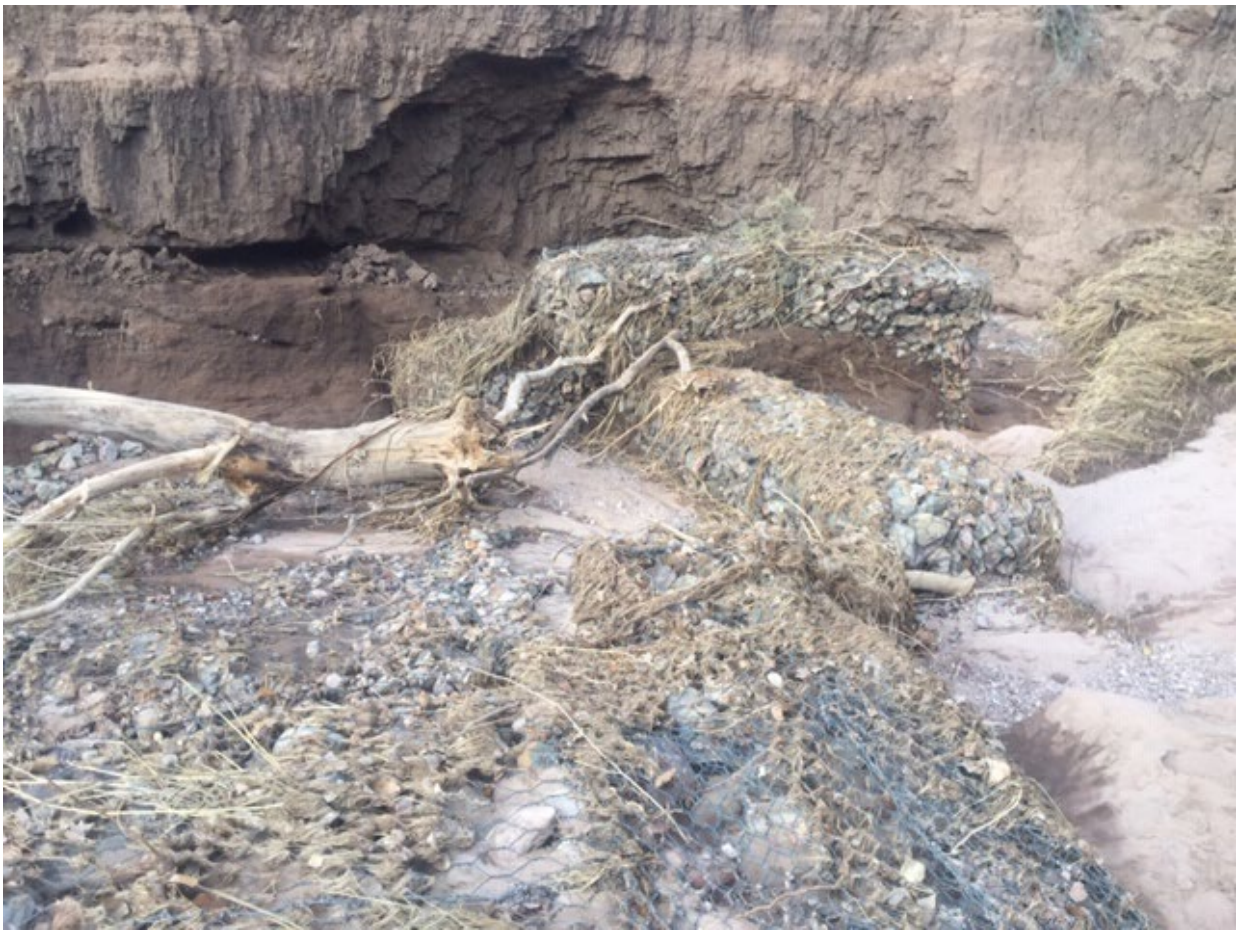
Region 6,7,8 Connects

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Tue, Dec 17, 2019 at 7:19 AM
Subject: Fwd: Hay hollow gabion
To: Juliette Fernandez <juliette_fernandez@fws.gov>

Hi Juliette; The attached photos were taken and provided to me yesterday. They depict some of the damage to refuge erosion control gabions that suffered from the Thanksgiving Week flood event that impounded water at the DHS Hay Hollow Wash Crossing upstream from the refuge. Flood waters were unnaturally impounded upstream of the DHS earthen crossing, and then catastrophically failed as the impounded water rose, which sent a wall of flood water and associated debris onto the downstream refuge. Erosion control gabions that have been in place on the refuge for the past 15-20 years (and have withstood natural flood events since that time - including Hurricane Odile in 2014) were severely damaged and are no longer functioning as designed. The Hay Hollow Wash stream channel was widened and also incised up to six feet in some areas with the failure of three refuge gabions, the flowing stream has been covered with upstream sediment - eliminating existing wetland habitat and the endangered fish that occurred there. (b) (3) (B) [redacted] Refuge staff are currently calculating what repairs will be necessary. Thank you, Bill Radke

---------- Forwarded message ---------
From: **Cassondra Walker** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 3:36 PM
Subject: Hay hollow gabion
To: <bill_radke@fws.gov>, <tasha_harden@fws.gov>

Downstream gabion



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--
William R. Radke; Project Leader
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Baca, Joaquin
To: Benjamin Padilla
Subject: Fwd: Hydrology meeting Monday, January 13th
Date: Friday, January 10, 2020 9:01:49 AM

---------- Forwarded message ---------
From: **Fernandez, Juliette** <juliette_fernandez@fws.gov>
Date: Thu, Jan 9, 2020 at 5:13 PM
Subject: Hydrology meeting Monday, January 13th
To: Grant Harris <grant_harris@fws.gov>, Steve Reagan <steve_reagan@fws.gov>, David Stewart <david_stewart@fws.gov>, Darrell Kundargi <Darrell_Kundargi@fws.gov>, Joaquin Baca <joaquin_baca@fws.gov>, Burck, Peter <peter_burck@fws.gov>, Bill Radke <bill_radke@fws.gov>, Sesnie, Steven <steven_sesnie@fws.gov>, Ariel MacMillan <ariel_macmillan@fws.gov>

Team,
Thank you for the work everybody is doing on the San Bernardino NWR project. I look forward to meeting with you again on Monday. We will meet in the 4th floor conference room and call Bill at 3:30pm.

As we know, we don't have the luxury of time on this issue so please be prepared to discuss current findings and ideas for addressing them. We need to identify any gaps in data/information, how to get it ASAP, what additional help/expertise/resources we need to acquire and how this work should be presented.

Please visit the below link with assignments. We will touch on each one during the meeting. Everything we present should be biologically sound, easily understood and legally defensible. Look at your projects through that lens.

https://docs.google.com/document/d/16nNPH-d9Lk_hsUC4_IegkWo0JEqDVwIJYwUW6Fn5YUw/edit?usp=sharing

I'm sorry, I don't know Ben's last name!!! Please share this with him.

With immense thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."

Justice Oliver Wendell Holmes

From: Baca, Joaquin
To: Darrell Kundargi; Ariel MacMillan
Subject: Fwd: Invitation: Conf call CBP border water use @ Tue Aug 20, 2019 4pm - 5pm (MDT) (joaquin_baca@fws.gov)
Date: Monday, August 19, 2019 3:41:43 PM

This is a water rights action, it would be good if both of you are on the call.

---------- Forwarded message ---------
From: **Julie McIntyre** <julie_mcintyre@fws.gov>
Date: Mon, Aug 19, 2019 at 2:14 PM
Subject: Invitation: Conf call CBP border water use @ Tue Aug 20, 2019 4pm - 5pm (MDT) (joaquin_baca@fws.gov)
To: <joaquin_baca@fws.gov>, <susan_sferra@fws.gov>, <jason_douglas@fws.gov>, <salek_shafiqullah@nps.gov>, <daniel_j_martin@nps.gov>, <juliette_fernandez@fws.gov>, <scott_richardson@fws.gov>, <rijk_morawe@nps.gov>, <pimentel.emily@epa.gov>, <vitulano.karen@epa.gov>, <sid_slone@fws.gov>, <cat_crawford@fws.gov>, <bill_radke@fws.gov>, <brent_range@ios.doi.gov>, <marit_alanen@fws.gov>, <(b) (6), (b) (7)(C)>, <doug_duncan@fws.gov>, <erin_fernandez@fws.gov>, <scott_stonum@nps.gov>

You have been invited to the following event.

Conf call CBP border water use

more details »

When Tue Aug 20, 2019 4pm – 5pm Mountain Time - Denver

Where phone: (b) (5), passcode: (b) (5) (map)

Video call https://hangouts.google.com/hangouts/_/doi.gov/julie-mcintyre

Calendar joaquin_baca@fws.gov

Who
- julie_mcintyre@fws.gov - organizer
- susan_sferra@fws.gov
- jason_douglas@fws.gov
- salek_shafiqullah@nps.gov
- daniel_j_martin@nps.gov
- joaquin_baca@fws.gov
- juliette_fernandez@fws.gov
- scott_richardson@fws.gov
- rijk_morawe@nps.gov
- pimentel.emily@epa.gov
- vitulano.karen@epa.gov
- sid_slone@fws.gov
- cat_crawford@fws.gov
- bill_radke@fws.gov
- brent_range@ios.doi.gov
- marit_alanen@fws.gov
- (b) (6), (b) (7)(C)

- doug_duncan@fws.gov
- erin_fernandez@fws.gov
- scott_stonum@nps.gov

Going (joaquin_baca@fws.gov)? **Yes** - **Maybe** - **No** more options »

Invitation from Google Calendar

You are receiving this email at the account joaquin_baca@fws.gov because you are subscribed for invitations on calendar joaquin_baca@fws.gov.

To stop receiving these emails, please log in to https://www.google.com/calendar/ and change your notification settings for this calendar.

Forwarding this invitation could allow any recipient to send a response to the organizer and be added to the guest list, or invite others regardless of their own invitation status, or to modify your RSVP. Learn More.

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Bill Radke
To: julie_mcintyre@fws.gov
Subject: Fwd: more info for meeting?
Date: Friday, November 22, 2019 11:46:26 AM

FYI - I am doing all this from my cell phone today. Please continue to tell me if maps are not being forwarded adequately.

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

> **From:** "McIntyre, Julie" <julie_mcintyre@fws.gov>
> **Date:** November 22, 2019 at 11:40:32 AM MST
> **To:** Bill Radke <bill_radke@fws.gov>
> **Subject: Re: more info for meeting?**
>
> Bill, the attachment with well locations did not make it on the email i received that you forwarded from Tasha. Could you send that for our call?
> I have whipped out the lovely satellite photo map you kindly provided me when Marit and i visited SBNWR, so have that as reference for the call.
>
> Thx.
>
> On Fri, Nov 22, 2019 at 11:28 AM Bill Radke <bill_radke@fws.gov> wrote:
>> Juliette; It depends upon what exact location on "Black Draw" they are measuring from. Neither of the two new well locations identified to me yesterday are "four miles from Black Draw."
>>
>> The bigger issue is that Black Draw is geographically situated in sort of the center of the refuge (about 1.5 miles from the west refuge boundary and about 2 miles from the east refuge boundary) and is the lowest elevation on the refuge. We have all our wells located either east or west of Black Draw and all wells are higher in elevation = head pressure is always impacted first at the higher elevations. DHS and USACE requested that I send them a map of refuge wells/ponds, and I did that some time ago, so there is no confusion on there part regarding the location of endangered species.
>>
>> The bottom line is that how far proposed wells are to be located from Black Draw is not what we have requested. We have requested a five mile buffer from the refuge boundary and even that minimal distance will not remove the threat to our aquifer, it will only give us a little more time to measure the beginning of the effects before they become a dire emergency for us.
>>
>> Thanks, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Nov 22, 2019, at 11:07 AM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> All,
> On my coordination call this morning they did say that they have discontinued the well at mile marker 18 because they hit clay. Their new location is proposed at 4 miles from Blackdraw. Can you tell me how far away that is from the refuge? I think this can be a point of conversation on our call today.
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell
>
> On Nov 22, 2019, at 11:02 AM, Bill Radke <bill_radke@fws.gov> wrote:
>
> > All; In preparation for today's conference call with DHS and USACE, San Bernardino NWR staff produced the email I am forwarding. It depicts the planned potential new well withdrawal locations on the north edge of the refuge on private land. They are located upstream from, and less than one mile from existing refuge wells, with one being significantly less than a mile. I heard about these yesterday from the landowner, who was told by the contractors that they would be pumping water from one of two new locations. One of these is the northern most well on the map (this is the Peterson well, which was the threat back in 2002 that prompted the Service to perform the aquifer test which was published by Broska). The pump test depicted significant impact to refuge wells if the Peterson well were to be utilized for high volume pumping - it had a capacity in 2002 of pumping 600 gallons per minute. Contractors also are proposing to drill a new well into the deep aquifer at the northeast location plotted on the map on the Glenn Ranch which already has a windmill driven shallow aquifer well at

that location.

We have repeatedly and consistently requested that no well be utilized within a five mile buffer of the refuge, and have provided the aquifer test, published in 2003, as documentation to support our request for the buffer. Our science supported risk assessment predicted harm to the refuge from an increased volume of water use, and we are already experiencing the impacts that were predicted.

Use of either of these newly planned wells will further hasten the threat of keeping adequate artesian water flowing onto the refuge to provide habitat for multiple endangered species.

Our refuge water monitoring is already showing harm to our aquifer during months when the refuge has always demonstrated an increase in groundwater levels. We have ponds dropping precipitously (as much as a foot already) that have never gone low during the winter months - not ever. During this time of year, Refuge wetland experience less evaporation and zero transpiration effects, when historically there is ample water during winter. If we are already experiencing negative effects during winter, this will get increasingly worse during spring and summer months.

We have already turned water off to three refuge ponds in an effort to minimize impacts to other ponds, and have salvaged and relocated endangered fish (kind of like cutting off individual fingers in an attempt to save the hand).

Over the past month, we have had unknown parties tampering with some refuge well valves, something that has previously never happened on the refuge since the time it was established. We will now need to figure out ways to chain and lock valves on multiple refuge wells to try and impede tampering.

The additional time and funding being spent by refuge staff (and regional staff) in purchasing and installing additional monitoring equipment, weekly monitoring of pond levels, flow meters, depth to water at monitoring wells, pressure transducers to establish head pressures, analyzing this information, and now trying to secure wells and expensive monitoring equipment has become an overwhelming priority that

diminishes our ability to adequately meet other important objectives, obligations, and due dates.

I believe that we need to be the ones conducting refuge monitoring to ensure credibility, but we have teamed up with Arizona Department of Water Resources personnel to help gather and share the information, which also provides transparency into our data collection process.

I do not know what reaction to expect from DHS or USACE to our continuing requests for them to minimize or mitigate impacts to the refuge, but so far our requests have been consistently met with indifference.

Thank you all for engaging in this important issue.
Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

> **From:** "Harden, Tasha" <tasha_harden@fws.gov>
> **Date:** November 22, 2019 at 8:22:45 AM MST
> **To:** Bill Radke <bill_radke@fws.gov>
> **Subject: Re: more info for meeting?**
>
> Also- MaGoffin pond is down a foot (Monty says that the pump doesn't run well during cloudy days and the flows get really low and even to no flow until the solar recharges which may cause it to drop- BUT I don't recall seeing anywhere that the refuge had issues with the hackberry ponds during any of the other falls/winters from the time they were

established, other than when charles grubbed cattails in them)

And- Monty found that someone has been messing with mitigation well and had turned on the water to yaqui pond. It wasn't on when I got picks for Jaoquin on the 12th.

On Fri, Nov 22, 2019 at 8:10 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Attached is an overall pic showing relation of the proposed wells
>
> And Cass pumped out a quick graph showing depth and pressure from one HH monitoring well- clearly the depth to water has been increasing over the years but it is
> extremely exaggerated this year, with a very large variation... the only changed variable is the recent huge increase in local water use.
>
> --
> Tasha Harden
> Assistant Manager
>
> San Bernardino & Leslie Canyon NWRs
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104 x106
> Cell: 520-368-6004
> Fax: 520-364-2130

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Tasha Harden
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Fax: 520-364-2130

--
Julie McIntyre, Ph.D.

Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From:	Radke, Bill
To:	Beth Ullenberg
Cc:	Juliette Fernandez; Tasha Dolgoff; Harden, Victor; McIntyre, Julie; Erin Fernandez; Humphrey, Jeff
Subject:	Fwd: New Border Infrastructure Impacts on Slaughter Ranch
Date:	Tuesday, October 29, 2019 6:42:03 AM
Attachments:	Border Statement 5.6 mb.pdf

Hi Beth; As you can see from the email chain, San Bernardino NWR personnel have communicated with Slaughter Ranch (Johnson Historical Museum) about FWS concerns with water withdrawal from a private well on private land resulting from DHS border infrastructure construction. No FWS personnel told anyone at Slaughter Ranch that construction would dry up their pond. We are working with DHS, Army Corps of Engineers, and refuge neighbors to try to understand potential impacts, develop an accurate (science-based) risk assessment (Joaquin Baca developed that for FWS), and alleviate or mitigate identified impacts. The risk assessment has been provided to DHS, to the owners of the private well being used by DHS contractors, and to the owners of Slaughter Ranch. In more recent weeks, DHS contractors have drilled a new well less than five miles west of the refuge, and identified plans to drill a second new well less that two-and-one-half miles east of the refuge. FWS continues to express concerns to DHS that their water withdrawal will impact artesian flow of water on the refuge and will put endangered species at greater risk. DHS has not responded with a solution, and has not answered the FWS request to minimize water use from the private well in question and to refrain from drilling additional wells within five miles of the refuge. Additionally, Slaughter Ranch, reacting to the very real threat of losing their domestic water supply, is pursuing development of an additional domestic water well on their private property. The Arizona Daily Star has submitted a FOIA request to FWS pertinent to this issue at Slaughter Ranch, and they have already been provided the information that they requested. Juliette Fernandez has recommended developing "talking points" relative to this issue, and we will try to get to that as soon as multiple other immediate priorities have been addressed at our end. I hope this information is useful to you in dealing with questions from the news media. Thank you for helping us with this issue, Bill Radke

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Wed, Sep 18, 2019 at 6:36 AM
Subject: New Border Infrastructure Impacts on Slaughter Ranch
To: <(b) (6) >
Cc: (b) (6) <(b) (6) >

Hi Allan; Perhaps you are already well aware of the pending border infrastructure that is being constructed across the San Bernardino Valley. A major concern is the extraordinary volume of water that will be pumped to support this construction activity (DHS - Department of Homeland Security - has reported expected volumes ranging between 83,000 - 700,000 gallons per day to support their concrete batch plant and road maintenance activities). The well contractors plan to use is the one just south of Geronimo Trail Road on the Malpai Ranch, just about 1.5-miles west of House Pond on Slaughter Ranch. While the Fish and Wildlife Service is currently working to try and model how such water use will impact the groundwater aquifer on the refuge and on Slaughter Ranch, there are many unknowns that are not being effectively analyzed by DHS. If you have information pertaining to expected water use, how that use may affect Slaughter Ranch domestic water supplies, or if you observe a decline in pond levels, water flow, etc., please provide me that information. It may help us develop a

better risk assessment. I am attaching the risk assessment information developed for the Organ Pipe National Park area for your information. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

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William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Bill Radke
To: Tasha Dolgoff; cassondra_walker@fws.gov
Subject: Fwd: New WISKI Logins
Date: Friday, December 20, 2019 10:00:49 AM
Attachments: image.png
image.png

Hi; Region 2 considers the ongoing water withdrawal adjacent to SBNWR as being the current greatest threat to endangered species in the southwest region. They are dedicating a lot of resources toward monitoring and addressing the threats. Our data will be crucial in perfecting a federal reserved water right for the refuge.

During a conference call yesterday, Region 2 wants us to directly load our water monitoring data into the water resources database as soon as possible (Monday if possible if any one is working that day). If so, please work with Darrell Kundargi on Monday to accomplish this. The objective is to weekly load up our monitoring data so a team of hydrologists can begin crunching the numbers to create deliverables to document the ongoing damage to our aquifer and to try and determine and depict the point at which such damage is essentially permanent - can never be recharged.

We must be reaching our two week pressure transducer current condition baseline today or soon. It is important to get that data to Joaquin as soon as possible, and to begin releasing flow back into refuge wetlands. All water levels, flow meters, and wells must be consistently and carefully monitored and recorded, as we have been doing.

Juliette wants us to send her a weekly narrative that identifies "in fourth grade language," a basic summary of noteworthy conditions. Things like: Pressure transducers were removed after recording well pressures over the past two weeks, and water flow was resumed in those ponds. Twin-2 Pond went dry on December X. Slaughter Ranch began using their new domestic well on December X following installation of a flow meter to measure water use. Note any natural observations like: Dead fish were found in Black Draw on X. Flood event on X removed all refuge wetlands in Hay Hollow Wash by covering them with silt. Contractors treated Geronimo Trail Road with dust control chemical on January X. Refuge staff are coordinating with AGFD and Phoenix Zoo to conduct emergency salvage of San Bernardino springsnails threatened by water drawdowns. You get the idea.

Finally, please call Alan Finks and arrange installation of a flow meter and a pressure transducer and cable in their new well. It is the closest well to the Glenn Ranch Well and will be our best chance for monitoring impacts. He has previously offered this. I tried communicating with him earlier this week about monitoring without success. Region 2 is sending us the transducer and cable soon. The Slaughter Ranch well contractor could install the flow meter and just bill us directly. This will be crucial to any future legal action being discussed.

Please download and send Joaquin the two-month historic Hay Hollow Well transducer data you recently located.

I probably am forgetting something, but this covers most of what we were directed to do. Thank you for your help, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

From: "Kundargi, Darrell" <darrell_kundargi@fws.gov>
Date: December 19, 2019 at 4:20:08 PM MST
To: "Gracer, Tara" <tara_gracer@fws.gov>, Ricardo Estrada <ricardo_estrada@fws.gov>
Cc: "Harden, Tasha" <tasha_harden@fws.gov>, Cassondra Walker <cassondra_walker@fws.gov>, Bill Radke <Bill_Radke@fws.gov>, "Baca, Joaquin" <Joaquin_Baca@fws.gov>
Subject: New WISKI Logins

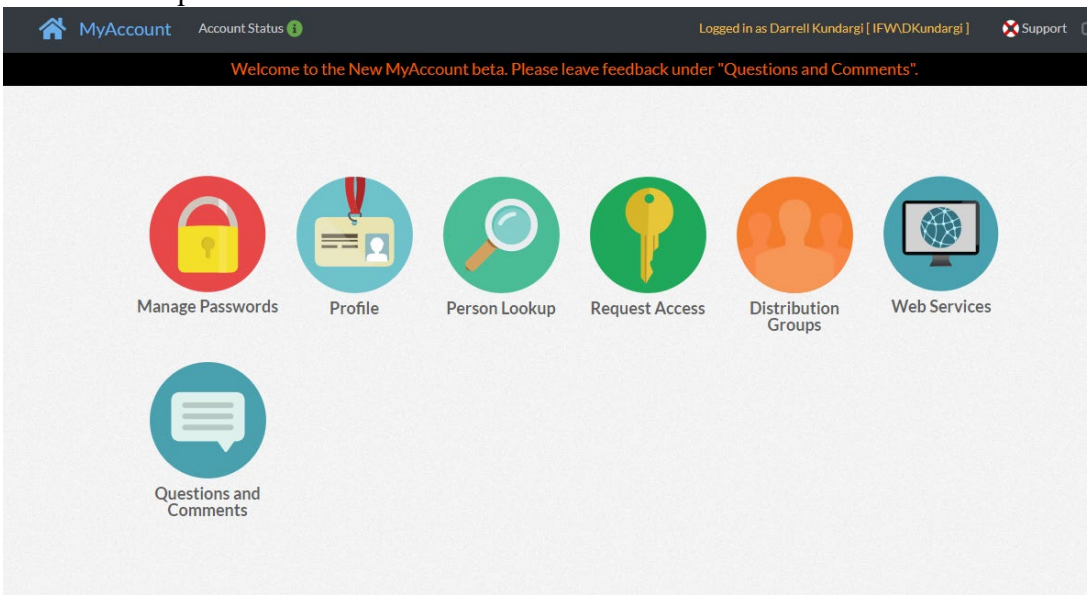
Hi Tara and Ric,

I'd like to get WISKI database access for two staff at San Bernadino National Wildlife Refuge. I've set them up with user profiles in WISKI.

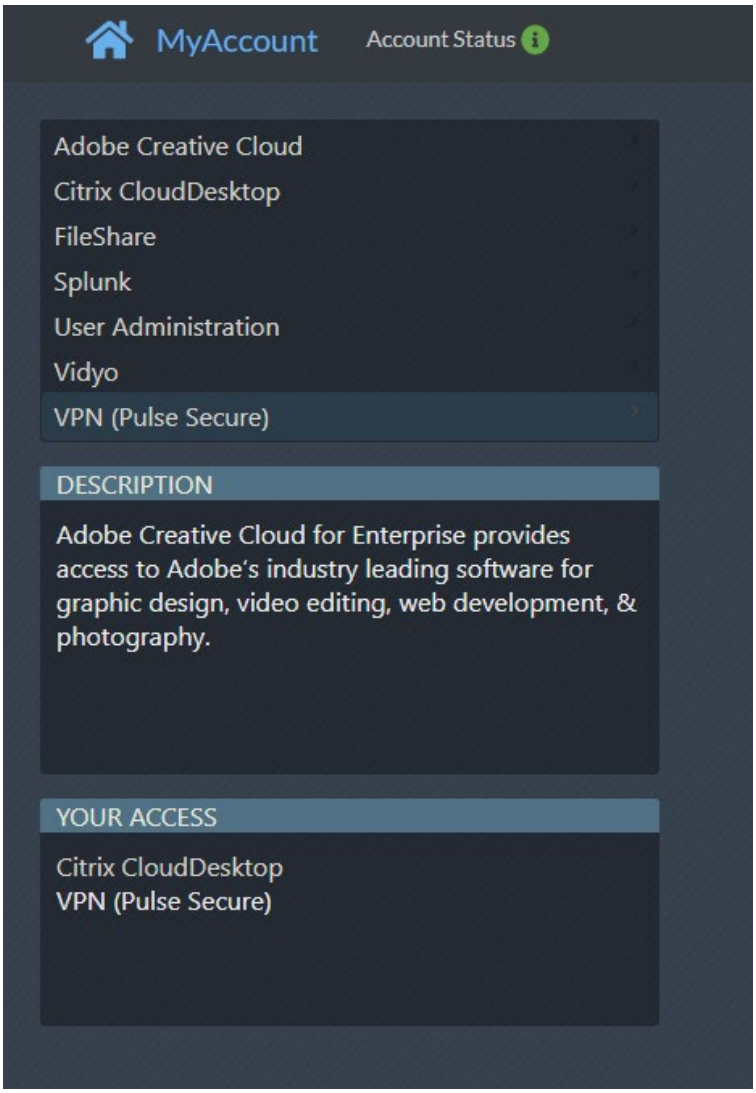
Ric, can you please give them access to the WISKI server? Their AD logins are tasha_harden@fws.gov and cassondra_walker@fws.gov.

Tasha and Cassandra, to access the database you'll need to request Citrix access. Go to this site: https://myaccount-beta.fws.gov/index.cfm

Click on "Request Access"



Then click on "Citrix CloudDesktop"



Thanks!

Darrell

--

****

Darrell Kundargi
Hydrologist
Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW
Albuquerque, NM 87102

Ph: (505) 248-6430

Cell: (505) 362-3075
www.facebook.com/USFWS Water Resources

From: Kundargi, Darrell
To: Harden, Tasha; Cassondra Walker; Baca, Joaquin; Hilola Adham
Subject: Fwd: One more change
Date: Friday, January 17, 2020 12:29:26 PM

All,

Scarlett has made some additional changes for your review. Thanks Scarlett!

Darrell

---------- Forwarded message ---------
From: **Adham, Hilola** <hilola_adham@fws.gov>
Date: Fri, Jan 17, 2020 at 11:50 AM
Subject: Re: One more change
To: Kundargi, Darrell <darrell_kundargi@fws.gov>
Cc: Baca, Joaquin <Joaquin_Baca@fws.gov>

I updated the survey again here. Is this what you were looking for? Let me know if I forgot something.

On Fri, Jan 17, 2020 at 10:44 AM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Can you add an additional field to the Survey123 form? It would be LT500 pressure reading.
>
> Thanks,
>
> DK
>
> --
>
> **********
> Darrell Kundargi
> Hydrologist
> Branch of Water Resources
> U.S. Fish and Wildlife Service
> 500 Gold Street SW
> Albuquerque, NM 87102
>
> Ph: (505) 248-6430
> Cell: (505) 362-3075
> www.facebook.com/USFWS Water Resources

--
H. Scarlett Adham
SCA Intern
FWS Albuquerque Regional Office

--

****

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Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW
Albuquerque, NM 87102

Ph: (505) 248-6430
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From: Harden, Tasha
To: Bill Radke; Brenda Leon
Subject: Fwd: Pressure/Flow Calcs
Date: Friday, January 3, 2020 1:45:35 PM
Attachments: image.png

FYI-

Brenda please provide me with an itemized list of just the "big ticket" costs that we have spent so far on this water monitoring stuff and I will verify we can RDS those to the cost code below. It sounds like we won't get any resistance but they need a heads up for their budget tracking. I will be sending you another email with more items we need that we can apply to their cost code as well. Thanks!

---------- Forwarded message ---------
From: **Baca, Joaquin** <joaquin_baca@fws.gov>
Date: Fri, Jan 3, 2020 at 1:36 PM
Subject: Re: Pressure/Flow Calcs
To: Harden, Tasha <tasha_harden@fws.gov>
Cc: Kundargi, Darrell <darrell_kundargi@fws.gov>, Cassondra Walker <cassondra_walker@fws.gov>, Burck, Peter <peter_burck@fws.gov>

Hey Tasha,

here is the cost code for water. Juliette gave the go ahead to share with you guys. Feel free to use as needed, just coordinate with Darrell and keep track of everything for our accounting. Im not sure what the ceiling is on this, but my understanding is you guys get what you need. I believe you can apply some of your past purchases to this as well.

WBS: FXRS12610200000
Fund: 201
Cost Center: FF02R0W000

On Thu, Jan 2, 2020 at 10:01 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

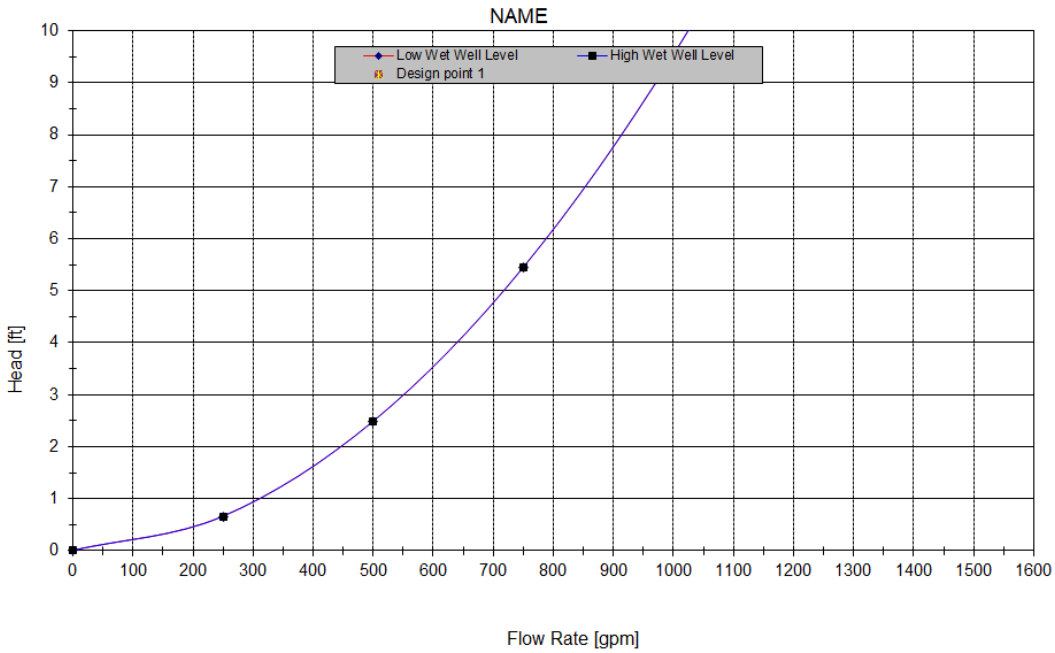
> Morning Darrell!
>
> Monty and Cass have kept me up to date with things and I understand we will be getting a detailed list, next week, of things we will need to do. They are already getting on some of the things you discussed with Monty.
> As of this morning here is a list of some Insitu items we need in order to outfit our other water wells (4) for pressure readings, and to improve current conditions:
>
> - troll com 0651460 / DB9 connector
> - Dessicant 0053550 (16)
> - NPT adapter 0051470 (6-this includes a couple extra)
> - rugged cable 0052000 (40 ft for slaughter ranch well)
> - rugged cable 0052000 (8- shortest lengths possible, a foot would work, for the trolls on our water wells)
>   - Ensure at time of order that it will work/connect with the level troll 500s and the wireless troll com

- Also need to ensure that they come with the securing metal loop on the top end, or order some if they don't.

If you need me to purchase some or all of these items with refuge funds just let me know! Thanks!

On Fri, Dec 27, 2019 at 2:55 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Hi All,
>
> Per the last conference call, we need to establish a relationship between the pressure head and flow rate for the artesian wells. I can develop a theoretical relationship curve, but we'd need some real life data to calibrate the modelled curve. A theoretical curve would look something like the image below.
>
> We need the following information for each well. Next to each item I've put down who needs to get that info, Refuge or Water.
>
> Valve size (Refuge)
> Valve type (Refuge)
> Pipe diameter (Refuge)
> Pipe material (Refuge)
> Pipe length (Refuge)
> Fittings (Refuge)
> Elevation where pressure is recorded (Water)
> Elevation of discharge (Water)
>
> To calibrate the curve we need the following:
>
> Pressure, both static and dynamic (Already being done)
> Flow (Water and Refuge)
>
> To collect flow data, we will need to install a flow meter. **I need the pipe diameter for each well ASAP** so I can order the correct flow meters. Can your maintenance staff install the flow meter for us? I can talk with your maintenance staff about installing the meter.
>
> Once the flow meter is installed, I'll need to come down to hook it up to a solar panel and datalogger.
>
> Thanks!
>
> Darrell



--
Darrell Kundargi
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--
Tasha Harden
Assistant Manager

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--
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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
Tasha Harden
Assistant Manager

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PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
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Fax: 520-364-2130

From: McIntyre, Julie
To: Range, Brent
Cc: Jeff Humphrey
Bcc: bill_radke@fws.gov
Subject: Fwd: San Bernardino NWR Border Infrastructure Issues
Date: Thursday, October 31, 2019 6:08:06 PM

Hi Brent,

A heads up on the well status at San Bernardino NWR. This is concerning for the 5 listed aquatic species for which San Bernardino NWR was created: San Bernardino springsnail, Yaqui chub, Yaqui topminnow, Yaqui catfish, and beautiful shiner. The springsnail is found in one small cemented seep (about 1 meter square in size) on the Slaughter Ranch, which is located within San Bernardino NWR - this is the only known location in the US.

Hoping that the water monitoring either detects no detrimental impact to the species, or that it catches changes and offers enough time to seek alternative options to discharging water from wells too close to the species' ponds and springs.

Am available to discuss tomorrow and over the next few months,

Julie

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Thu, Oct 31, 2019 at 3:26 PM
Subject: San Bernardino NWR Border Infrastructure Issues
To: Juliette Fernandez <juliette_fernandez@fws.gov>
Cc: Joaquin Baca <joaquin_baca@fws.gov>, Tasha Dolgoff <tasha_harden@fws.gov>, McIntyre, Julie <julie_mcintyre@fws.gov>

Hi Juliette; I was disappointed today to see first hand that DHS and U.S. Army Corps of Engineers (ACOE) did not abide by the (most recent) October 16, 2019 Fish and Wildlife Service (FWS) request to minimize water withdrawal from the aquifer that supports all wetlands on San Bernardino NWR. Contractors are continuing to pump high volumes of water from the Glenn Ranch well located about 1.5 miles west of the refuge, have not yet used their newly drilled well located in the Roosevelt Reservation near milepost 9 about 4.8 miles west of the refuge, and sadly did not heed our recommendation not to drill closer that 5-miles from the east side of the refuge. Instead, contractors have begun drilling their second new well 480 FEET east of SBNWR (see photos), and it is on state trust land rather than within the Roosevelt Reservation. All this is in support of the 30-foot tall barrier that contractors began erecting along the south side of the refuge yesterday (see photos). There is also significant road enhancement and water use (see photos) as part of the project.

While DHS/ACOE stated that they would provide FWS updated water use numbers, they have not presented those numbers yet. This increases the concerns already identified within the FWS risk assessment which was provided to DHS/ACOE on October 15, 2019 about border

infrastructure impacts to refuge wetlands and listed species. We are monitoring refuge wells, pond levels, water discharge rates, etc., and will be alert to expected changes so that we can respond appropriately. The pictures below were taken this morning. Thank you for your help, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
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Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

"Learn More About Endangered Species Conservation in the Southwest!"

From: Baca, Joaquin
To: David Stewart; Ariel MacMillan
Subject: Fwd: San Bernardino NWR Border Infrastructure Issues
Date: Friday, November 1, 2019 8:39:18 AM

---

fyi: disappointing is an understatement

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Thu, Oct 31, 2019 at 4:26 PM
Subject: San Bernardino NWR Border Infrastructure Issues
To: Juliette Fernandez <juliette_fernandez@fws.gov>
Cc: Joaquin Baca <joaquin_baca@fws.gov>, Tasha Dolgoff <tasha_harden@fws.gov>, McIntyre, Julie <julie_mcintyre@fws.gov>

Hi Juliette; I was disappointed today to see first hand that DHS and U.S. Army Corps of Engineers (ACOE) did not abide by the (most recent) October 16, 2019 Fish and Wildlife Service (FWS) request to minimize water withdrawal from the aquifer that supports all wetlands on San Bernardino NWR. Contractors are continuing to pump high volumes of water from the Glenn Ranch well located about 1.5 miles west of the refuge, have not yet used their newly drilled well located in the Roosevelt Reservation near milepost 9 about 4.8 miles west of the refuge, and sadly did not heed our recommendation not to drill closer that 5-miles from the east side of the refuge. Instead, contractors have begun drilling their second new well 480 FEET east of SBNWR (see photos), and it is on state trust land rather than within the Roosevelt Reservation. All this is in support of the 30-foot tall barrier that contractors began erecting along the south side of the refuge yesterday (see photos). There is also significant road enhancement and water use (see photos) as part of the project.

While DHS/ACOE stated that they would provide FWS updated water use numbers, they have not presented those numbers yet. This increases the concerns already identified within the FWS risk assessment which was provided to DHS/ACOE on October 15, 2019 about border infrastructure impacts to refuge wetlands and listed species. We are monitoring refuge wells, pond levels, water discharge rates, etc., and will be alert to expected changes so that we can respond appropriately. The pictures below were taken this morning. Thank you for your help, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region

Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Radke, Bill
To: Joaquin Baca
Subject: Fwd: San Bernardino NWR Hydrology Information
Date: Wednesday, August 21, 2019 9:51:36 AM
Attachments: File Attached
SBNWR Aquifer Test Report 2002.pdf
Earman et al 2003 Final Hydrology Report Abstract.pdf
Earman 2003 Progress report Abstract.pdf
SBNWR Water Quality Progress Report 2012.pdf
Tectonic influences_GW2008_as.Publlished.pdf

I don't know why these didn't make it to you in the first email chain I sent this AM, but hopefully they are included this time. Please let me know. Thanks, Bill Radke

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Wed, Dec 13, 2017 at 10:45 AM
Subject: San Bernardino NWR Hydrology Information
To: <(b) (6)>

Hi Allan; Attached to this email is my letter and five accompanying hydrology reports/abstracts per your request. I will also mail you paper copies of all this same information today. I hope it is useful to you, and please contact me if you have any questions about this that I might be able to help answer. As we continue to make progress on our project, we will continue to monitor area wetlands to document any changes that might occur. If you ever observe any detriments to your property that may be a result of any of our work on the adjacent national wildlife refuge, please notify me immediately so we can work together to address the issue. Thank you, Bill Radke

William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

United States Department of the Interior

Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino National Wildlife Refuges
P O Box 3509 7628 North Hwy. 191
Douglas, Arizona 85608

Mr. Allan Finks
Johnson Historical Museum of the Southwest
c/o 6144 E. Janice Way
Scottsdale, AZ 85254
(b) (6)

December 13, 2017

Dear Mr. Finks:

Thank you for your November 20, 2017 inquiry about the wetland under construction at San Bernardino National Wildlife Refuge (SBNWR) adjacent to the Johnson Historical Museum of the Southwest (Slaughter Ranch). As background information, under the Secure Fence Act of 2006, Department of Homeland Security (DHS) was authorized to build up to 700 miles of fencing along the southwest border of the United States to promote national security. To mitigate for construction of this border security infrastructure, DHS officials committed to working with the U.S. Fish and Wildlife Service (FWS) to help protect endangered species and associated environments. DHS agreed to help fund the construction of wetlands and irrigation wells capable of supporting populations of Federally-listed threatened and endangered fish and springsnails located on SBNWR and on Slaughter Ranch.

In anticipation of providing additional wetland habitat on SBNWR, a variety of hydrologic studies have been conducted on and adjacent to SBNWR during recent years. While the exact hydrological relationship between wetlands on Slaughter Ranch and SBNWR remains imperfectly understood, it appears that some wetlands have influences upon each other while other wetlands appear to be fed by separate aquifers which are not connected. An extensive hydrologic study, based on carbon-14 analysis and tritium activity, was published by New Mexico Institute of Mining and Technology in 2003. Their report documented no/little aquifer connectivity between House Pond and refuge wells, and data supports their assumption that there is a geologic barrier between the aquifers that support the wetlands on these two properties. Additionally, an aquifer test was performed on SBNWR during 2002 to determine hydraulic properties such as transmissivity and storativity of the deep, confined aquifer that supports rare fish on the refuge. The final conclusion of this study indicated that the water yielded by wells on SBNWR is connected and transmitted by preferential flowpaths consisting of fractures in well-cemented alluvium and/or channel deposits. Between 2010-2012, refuge staff seasonally collected water samples at ten locations on Slaughter Ranch and SBNWR to help determine hydrologic relationships between individual springs, ponds, and wells. The water chemistry data provided by these samples documented relationships between some of the Slaughter Ranch wetlands, and no/little relationships between Slaughter Ranch and SBNWR wetlands. Finally, during 2012, U.S. Geological

Survey personnel collected water samples from sites on Slaughter Ranch and SBNWR for isotopic testing. Preliminary results from the isotopic sampling did not show any clear connectivity between Slaughter Ranch and SBNWR wetlands and did not support the theory that Slaughter Ranch springs are a mix of deep and shallow aquifers. Based on the results of these multiple hydrologic studies, wetland development on SBNWR is not expected to impact the wetlands occurring on Slaughter Ranch.

During 2016, SBNWR staff received funding to begin construction of a new refuge wetland that would be capable of supporting a self-sustaining population of Yaqui catfish (and other aquatic species). This pond is located adjacent to Double PhD Pond near the southwest corner of SBNWR, and will be supported by the 580-foot deep "Mitigation Well," funded by DHS and constructed during 2011. Artesian flow from this well has been measured at about 35 gpm, and can be increased to about 55 gpm through the use of an associated solar powered pump. This wetland habitat restoration project is supported by the 1995-2015 San Bernardino NWR/Leslie Canyon NWR Comprehensive Management Plan and associated Environmental Assessment.

The new pond encompasses about 2.4 surface acres, averages about 13 feet deep and reaches about 18.5 feet at its deepest point. The pond will be treated by contractors (Seepage Control, Inc.) using a water-borne compound (ESS-13) to control infiltration/seepage with the goal of preventing water loss and conserving water use. The pond is scheduled for completion during early 2018, when it will be slowly filled and monitored in relation to any potential influences on other wetlands located on and adjacent to SBNWR. The refuge was established to help promote the recovery of various rare fish, wildlife, and plant species, and wetland restoration is a primary objective of the refuge. Any restoration must ensure an adequate water supply having appropriate water quality capable of supporting populations of the species targeted for recovery. It is a major goal of the FWS to work with landowners within this area to improve overall habitat conditions for all plants and animals, and to lead the recovery and long-term protection of rare species. We take our collaboration with you and your work at Slaughter Ranch seriously. If information and/or evidence becomes available that demonstrates any detriment to existing wetlands on or adjacent to SBNWR that are resulting due to operation of the new pond, then such operation must be adjusted or cease so that existing wetlands continue in their capacity to perform their own species recovery purposes.

I hope this information is helpful to you. If you have additional questions or concerns that I can help address, please contact me at your convenience.

Sincerely,

William R. Radke
Refuge Manager

Reports Referenced and Attached:

Broska, James. 2002. Aquifer Test at San Bernardino National Wildlife Refuge, December 2-5, 2002. 20 p.

Earman et al. 2003. An Investigation of the Properties of the San Bernardino Groundwater Basin, Arizona and Sonora, Mexico. 283 p. (Abstract p 8-11).

Earman et al. 2003. An Investigation of the Properties of the San Bernardino Groundwater Basin, Arizona and Sonora, Mexico. Progress Report Abstract 4 p.

USFWS. 2012. Summary of Water Quality and Spring Connectivity for San Bernardino NWR, Arizona. 5 p.

From: Baca, Joaquin
To: Darrell Kundargi; Ariel MacMillan; Burck, Peter
Subject: Fwd: San Bernardino NWR Periodic Hydrologic Monitoring Update
Date: Monday, December 30, 2019 1:35:39 PM

FYI

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Mon, Dec 30, 2019 at 12:07 PM
Subject: San Bernardino NWR Periodic Hydrologic Monitoring Update
To: Juliette Fernandez <juliette_fernandez@fws.gov>, Steve Reagan <steve_reagan@fws.gov>
Cc: Joaquin Baca <joaquin_baca@fws.gov>

Juliette and Steve;

In order to collect a "baseline" condition of selected artesian wells on the refuge, it was necessary to temporarily turn valves off at the Twin Ponds, the Hay Hollow Ponds, North Pond, and Mitigation Pond. The goal was to obtain two weeks worth of "baseline" data from these wells, to compare against in determining the impacts of large scale water withdrawal by DHS contractors.

During the week of Dec 2, 2019, water was turned off to the two Hay Hollow Ponds and to North Pond, and pressure transducers were installed and programmed to begin logging. Mitigation Well was previously turned off (water used to fill and maintain Yaqui Pond was stopped and put on hold), and a pressure transducer was installed and began logging at that location on November 29, 2019.

On Dec 10, 2019, Twin well was turned off, stopping flow to Twin1 and Twin 2 Ponds, and a pressure transducer was installed and began logging. Turning off water to these ponds to collect baseline information resulted in the rapid failure of Twin-2 Pond, which was almost empty by Dec. 12, 2019.

On Dec 12, 2019, water was turned back on to maintain Twin 1 Pond, but Twin 2 Pond had already dropped to a dangerous level, and all existing fish in this pond perished. North Pond level measured 1.18 on the staff gauge, and refuge staff will turn water inflow back on after the week of the 20th, once a full two weeks of pressure data has been collected.

During the week of Dec 20, 2019,

- Water to the two Hay Hollow Ponds was turned back on (Dec 16, 2019) since pond levels had dropped 0.5 ft. The pressure transducer was left in place in case pond levels rise high enough to run another pressure test.
- Flow levels were documented; artesian flows appeared fairly consistent.
- Pond levels and ground water well readings will be collected on Dec 20, 2019.
- The Glenn's Hay Hollow Windmill Well on private land adjacent to the NE corner of the refuge was not being utilized when checked on Dec 19, 2019, the hose was not hooked up to it, and was just laid out towards Geronimo Trail Road and ending east of the Glenn Ranch corrals.

- Refuge costs associated with purchasing monitoring equipment is over $10,000.00. U
- Assistant Manager T. Harden had a conference call on Dec 20, 2019 with Rod Dossey (project environmental specialist contractor) in regards to temporary Black Draw crossing on the border road being repaired. Prior to working on the crossing, contract biologists salvaged endangered fish at the crossing and relocated them upstream on the refuge, and below the fish barrier, in Black Draw. Both the Black Draw culvert crossing and the Hay Hollow Wash culvert crossings were washed out during the late November 2019 flood event, and contractors discussed alternate designs for the temporary crossing, with the ultimate end product to be a metal bridge. Dossey questioned the multiple damaged erosion control gabions on refuge, as he was under the impression that they were in Black Draw rather than Hay Hollow Wash. Dossey claimed to be completely unaware that contractors had build a culvert crossing upstream of the refuge in Hay Hollow Wash, and this was clarified by Harden who explained the damage to three Hay Hollow Wash gabions and the complete loss of wetlands (critical habitat occupied by endangered fish) due to the catastrophic loss of the contractor's culvert crossing upstream from the refuge. Dossey stated he would raise the Hay Hollow culvert crossing issue with his superiors, asked if a concrete apron style crossing would be more appropriate than the failed earthen levee and culvert style crossing that was constructed at that location, and refuge staff believe this would be a better option. The contract biologists will be out to salvage fish at the failed Black Draw culvert crossing on Jan 2-4, 2020 Dossey stated the repair of the temporary Black Draw culvert crossing is expected to begin Jan 6/7, 2020

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Harden, Tasha
To: Monty Mcdaniel
Subject: Fwd: Scan from San Bernardino NWR Sharp
Date: Thursday, January 2, 2020 3:47:36 PM
Attachments: SanBernardinoSharp_20200102_154803.pdf

---------- Forwarded message ---------
From: **San Bernardino Sharp** <SanBernardinoSharp@fws.gov>
Date: Thu, Jan 2, 2020 at 3:41 PM
Subject: Scan from San Bernardino NWR Sharp
To: <Tasha_Harden@fws.gov>

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From:	Bill Radke
To:	Juliette Fernandez
Cc:	peter_burke@fws.gov; joaquin_baca@fws.gov; steve_reagan@fws.gov; Tasha Dolgoff
Subject:	Fwd: Technical report
Date:	Thursday, November 7, 2019 2:49:22 PM
Attachments:	Untitled attachment 01669.html Calculations DrawdownSBNWR_Addendum07Nov19.pdf

---

Juliette; Attached is the final technical report produced by Joaquin Baca and Peter Burke. Thank you for sending this forward, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

> **From:** "Baca, Joaquin" <joaquin_baca@fws.gov>
> **To:** Bill Radke <bill_radke@fws.gov>
> **Subject: Re: Technical report**
>
> My apologies. Attached is the final report. I took some time and did some additional cleaning up, strictly formatting and consistency. There are no substantive changes.
>
> On Thu, Nov 7, 2019 at 2:09 PM Bill Radke <bill_radke@fws.gov> wrote:
>> Joaquin; Thank you for completing the Technical Report for San Bernardino BWR relating to the DHS border construction project and helping me fix the typographic issues that Juliette identified. When you have the final version ready, please send it to me. If you already sent me the final document since we have talked, I did not receive it. Thanks, Bill
>>
>> William R. Radke; Project Leader
>> U.S.Fish and Wildlife Service
>> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
>> Cell: 520 508-7180
>
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549
> www.facebook.com/USFWS Water Resources

From: Kundargi, Darrell
To: Baca, Joaquin; Peter Burck; Benjamin Padilla
Subject: Fwd: WISKI
Date: Friday, December 27, 2019 3:12:30 PM

Below is the list of wells and parameters that we need to set up in WISKI

---------- Forwarded message ---------
From: **Walker, Cassondra** <cassondra_walker@fws.gov>
Date: Thu, Dec 26, 2019 at 11:25 AM
Subject: Re: WISKI
To: Kundargi, Darrell <darrell_kundargi@fws.gov>
Cc: Harden, Tasha <tasha_harden@fws.gov>, Baca, Joaquin <Joaquin_Baca@fws.gov>

Ok cool, thank you. I assume you want all data I collect on wells, so here is the breakdown of what I am monitoring.

Wells with transducers:

- Bar Boot
- Leslie Canyon South
- Leslie Canyon Upstream
- Hay Hollow Ponds
- Hay Hollow Upstream
- Hay Hollow Downstream
- Slaughter Ranch (this does not yet have a transducer, but we are working on it)

Wells monitored with piezometer tape:

- Bar Boot
- Leslie Canyon South
- Leslie Canyon North
- Leslie Canyon Road
- Leslie Canyon Upstream
- Slaughter Ranch (working to get access with tape)
- Frog
- Black Draw East
- Balc Draw South
- Black Draw North
- Cemetery North
- Cemetery South
- Hay Hollow Ponds
- Hay Hollow Upstream
- Hay Hollow Downstream

Wells monitoring pressure (with transducer):

- Mitigation
- Hay Hollow
- Bunting (needs a new transducer)

Thanks for your help, I appreciate it.

Cass

On Thu, Dec 26, 2019 at 10:55 AM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Hi Cass,
>
> You'll need access to the WISKI server to see the database. I've sent an email to Ric Estrada at IRTM to give you and Tasha access. I haven't heard back from Ric, though. Can you please start an IRTM ticket to help keep this process moving? Here's an address to a cloud document that spells out the steps //ifw-hqfs2/ifwwiskicloud-storage/Manuals/NewWISKIUser/2ServerAccessNewUser.pdf
>
> Once you get access to the server I can walk you through accessing WISKI and uploading data. In the meantime, can you give me the names of the wells that you're monitoring so I can create those in the database?
>
> Best,
>
> Darrell
>
> On Thu, Dec 26, 2019 at 8:24 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> > Hi Darrell,
> >
> > Quick question: Where do I access the WISKI database? Once I get access, I'll start uploading data, but I don't know where to go to make this happen.
> >
> > Thanks,
> > Cass
> >
> > --
> > Cassondra Walker, PhD
> > US Fish and Wildlife Service
> > Refuge Biologist
> > San Bernardino and Leslie Canyon NWR
> >
> > PO Box 3509
> > 7628 N Hwy 191
> > Douglas AZ 85608
> > Office:520-364-2104x105
> > Cell: 520-368-6010
> > Fax: 520-364-2130
>
> --

****
Darrell Kundargi
Hydrologist
Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW
Albuquerque, NM 87102

Ph: (505) 248-6430
Cell: (505) 362-3075
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--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Ph: (505) 248-6430
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From:	McIntyre, Julie
To:	Fernandez, Juliette
Subject:	FWS AZ ES letter & enclosure to CBP June 2019
Date:	Friday, December 20, 2019 12:15:00 PM
Attachments:	FWS_SignedResponseLetterToCBP_PaulEnriquez_70482 (1) (1).pdf FWS_EnclosureConservationMeasuresToCBP_PaulEnriquez_70482.docx
Importance:	High

HI Juliette,

Please excuse my distraction and tardiness with getting these docs to you - it's been pretty crazy. I started looking for these yesterday, then got caught up in another issue - you know how it can be!

If we do not connect until the new year, have a wonderful holiday!

Julie

--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: Radke, Bill
To: Kelly Kimbro
Subject: FWS Hydrology Report for SBNWR
Date: Wednesday, October 16, 2019 1:09:38 PM
Attachments: Cover_Letter_SBNWR2019.pdf
Attachment1_151019_SBNWR_Drawdown.pdf
[redacted]_SBNWR_Legal_151019 (1).pdf **Withhold B5**

Kelly; The FWS remains concerned about water withdrawal from the "Granite Well" located on the Glenn Ranch and the potential impacts to the groundwater aquifer that supports the refuge. As a result, FWS Region-2 Hydrologists put together reports to accurately investigate the situation with the goal of producing an accurate risk assessment which would give us talking points for discussion with DHS. As this involves Glenn Ranch Corporation, I am providing those reports to you and Warner. Please call me if you have questions about the information. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Alan Finks
Subject: FWS Hydrology Report Regarding San Beranrdino NWR
Date: Wednesday, October 16, 2019 1:14:17 PM
Attachments: Cover_Letter_SBNWR2019.pdf
Attachment1_151019_SBNWR_Drawdown.pdf
[redacted]_SBNWR_Legal_151019 (1).pdf **Withhold B5**

Alan; The FWS remains concerned about water withdrawal from the "Granite Well" located on the Glenn Ranch and the potential impacts to the groundwater aquifer that supports the refuge and Slaughter Ranch. As a result, FWS Region-2 Hydrologists put together reports to accurately investigate the situation with the goal of producing an accurate risk assessment which would give us talking points for discussion with DHS. As this involves the FWS warranty deed on the Johnson Historical Museum of the Southwest property, I am providing those reports to you. As of yesterday, I had not received your letter regarding planned domestic well production at Slaughter Ranch, and I will respond once I receive it. Please call me if you have questions about the information attached. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Cassondra Walker
To: bill_radke@fws.gov; tasha_harden@fws.gov
Subject: Glenn HH well is hooked up
Date: Friday, December 20, 2019 5:38:44 PM

Today, the pipe that was previously unconnected to the well was connected.

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas, AZ 85608

Cell: 520-368-6010

From: Cassondra Walker
To: bill_radke@fws.gov; tasha_harden@fws.gov
Subject: Hay Hollow pond drains
Date: Friday, December 20, 2019 6:07:52 PM

Bill, I saw you asked about the Hay Hollow pond outlet, so I took a look today....it appears to be working but after a week of having the water turned back on, there was very little water in the stream. To me it looked like the water was percolating into the new sediment. In the picture, the drain is on the bottom right of the photo...there was no water on the downstream side of the debris pictured here.

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas, AZ 85608

Cell: 520-368-6010

From: Walker, Cassondra
To: Harden, Tasha
Subject: Hay Hollow Upstream
Date: Tuesday, November 26, 2019 1:13:34 PM
Attachments: Well_Data_Analysis.docx

Here is a little write up about the Hay Hollow Upstream Well. I made it a memorandum so it would look a little more official.

--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From: Walker, Cassondra
To: Radke, Bill; Harden, Tasha
Subject: Hay Hollow Wash 11/29/19
Date: Monday, December 16, 2019 6:56:53 AM

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist

San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From:	Radke, Bill
To:	Tasha Dolgoff; Cassondra Walker; Harden, Victor; Leon, Brenda; Monty Mcdaniel; (b) (6)
Subject:	Hay Hollow Wash Culvert Crossing "Before" Pictures
Date:	Wednesday, December 18, 2019 9:12:48 AM
Attachments:	Hay Hollow Wash Culvert Crossing and Windmill Location on Glenn Ranch - Refuge Boundary is black line.png

All; Attached are photographs I took October 31, 2019 of the Hay Hollow Wash Culvert Crossing on the Glenn Ranch. Given the volumes of water that flash through this drainage on a regular basis, I anticipated the "culverts covered with loose dirt" engineering would be a problem. We have previously identified this issue with DHS and USACE multiple times but our advice has never been heeded. Even now, after the Thanksgiving Week flood event damaged the crossing, sent a wall of water into the refuge following catastrophic failure of their culvert system, washed tons of sediment onto the refuge into designated critical habitat for endangered fish, and significantly damaged all three erosion control gabions that have otherwise worked effectively for the past 20 years, DHS contractors have "fixed" the problem by simply piling more dirt on top of the failed culverts and "armoring" that dirt with rock rip-rap. The next flood will send this right onto the refuge again. While we need to repair refuge erosion control gabions and restore wetland habitats in Hay Hollow Wash as soon as possible, it does not seem prudent or cost effective to conduct that work at the risk of losing it all again because of an inadequately designed stream crossing upstream from the refuge.

So, for now, the best we can do is:

1) Complete a damage assessment of all associated refuge infrastructure (boundary fence, gabions, downcut stream channel, monitoring wells/transducers, access roads, etc). We need measurements of wash-outs and missing gabion chunks, estimated volumes of rock/fill needed for repairs, is the Hay Hollow pond outlet pipe functioning, is there any wetland remaining that has live fish, is there any Huachuca water umbel remaining, did the monitoring well suffer flooding and is the transducer still functioning, is our boundary fence still there, were cultural resources damaged, etc. Then we need to estimate repair costs and associated staff time (including time spent doing the damage assessment). I also will need a running total of the costs we have had to incur for purchasing monitoring equipment, etc.

2) Continue our monitoring (wildlife trail cameras, water levels, well pressure, inflow volumes, transducers, etc). Region-2 wants us to work with Joaquin to analyze our data and provide it to Juliette in an understandable format. She also wants weekly updates on our issues ("The transducers were pulled from XX following their two-week deployment, and water flow was resumed into ponds," or " pond levels remained stable, and well monitoring showed an upswing, perhaps due to the recent flood event."). These statements should likely be reviewed by me before we submit them to anyone.

3) Document everything with photographs. Cell phone cameras are better than nothing, but use a better camera if possible. It is especially important to photo-document conditions following flood events, and to document "new construction activities" by contractors. Basically, anything that could be a problem for us (leaking oil from trucks, other contaminants, piles of fill in the watershed, stuck vehicles, safety hazards) should be photographed and provided to me for filing.

4) Work to install monitoring equipment into the Slaughter Ranch new well. Region-2 wants a pressure transducer in that well since it is our best hope for monitoring the deep aquifer as close to the Glenn Ranch Well as possible. We should also have a flow meter on this well to

measure the volume of water being withdrawn from the well. Work with Fred to make that happen, and tell me if Allan Finks needs additional information. We need to share all our Slaughter Ranch data with Slaughter Ranch personnel.

Please email me the information you gather, so I am able to check it from my cell phone when I am not otherwise available.

Thank you, everybody, for working through this emergency so efficiently and so well. Bill

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From:	Lupo, Frank R
To:	Lueders, Amy L; Archibeque, Aaron; Tade, Justin S; Fernandez, Juliette; Fleming, Jeffrey M
Subject:	Kirkpatrick letter to CBP re San Bernardino NWR
Date:	Monday, November 25, 2019 5:46:12 PM
Attachments:	20191125 Kirkpatrick Letter- CBP.pdf
Importance:	High

All-
In case it hasn't made it you yet, see attached correspondence from Rep. Kirkpatrick to CBP.

-Frank

--
~~~~~~~~~~~~~~~~~~~~~~~~~
Frank Lupo
Assistant Regional Solicitor
(505) 248-5611
(505) 248-5623 (fax)
~~~~~~~~~~~~~~~~~~~~~~~~~
This e-mail (including any attachments) is intended for the use of the individual or entity to which it is addressed. It may contain information that is privileged, confidential, or otherwise protected by applicable law. If you are not the intended recipient or the employee or agent responsible for the delivery of this e-mail to the intended recipient, you are hereby notified that any dissemination, distribution, copying or use of this e-mail or its contents is strictly prohibited. If you received
this e-mail in error, please notify the sender immediately and destroy all copies.

From:	Walker, Cassondra
To:	Darrell Kundargi; Baca, Joaquin; Harden, Tasha
Subject:	LT 500 Pressure Data
Date:	Sunday, January 19, 2020 9:53:33 AM
Attachments:	Bunting_06Jan-10Jan20.csv Bunting_10Jan-17Jan20.csv Twin_06Jan-10Jan.csv Twin_10Jan-17Jan20.csv HayHollow_03Jan-10Jan.csv HayHollow_10Jan-17Jan20.csv Mitigation_29Nov19-17Jan20.csv SBNWR_Water_Dates.docx

---

Well Pressure Data:

Bunting Well:
06 Jan - 10 Jan
10 Jan - 17 Jan

Twin:
06 Jan - 10 Jan
10 Jan -17 Jan

Hay Hollow:
03 Jan - 10 Jan
10 Jan - 17 Jan

Mitigation: (accidentally downloaded all data, not new data)
29 Nov 19 - 17 Jan 20

Updated Water Dates and Times

--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
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From: Walker, Cassondra
To: Harden, Tasha
Date: Sunday, January 5, 2020 8:13:17 AM
Attachments: SBNWR_Pond_Well_Update_30Dec19_03Jan20.docx

Tasha,

Attached is the latest update of water activities for San Bernardino NWR. Well transducer graphs are only updated to 31 Dec 19. As with previous graphs, the range difference in minimum and maximum measurements from well transducers continues to show larger differences than previous years, especially during the last half of 2019. Weekly data shows slight recovery in depth to water for the Hay Hollow wells, which I hypothesize may be related to the holidays and more days of suspended water usage off refuge. The variation in measurements still continues to be concerning and data may need to be analyzed hourly to see other trends (i.e. water extraction times related to work day length). The use of hydrologic models may shed light on to these patterns or provide answers to the disturbing data noticed.

Cass

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Office:520-364-2104x105
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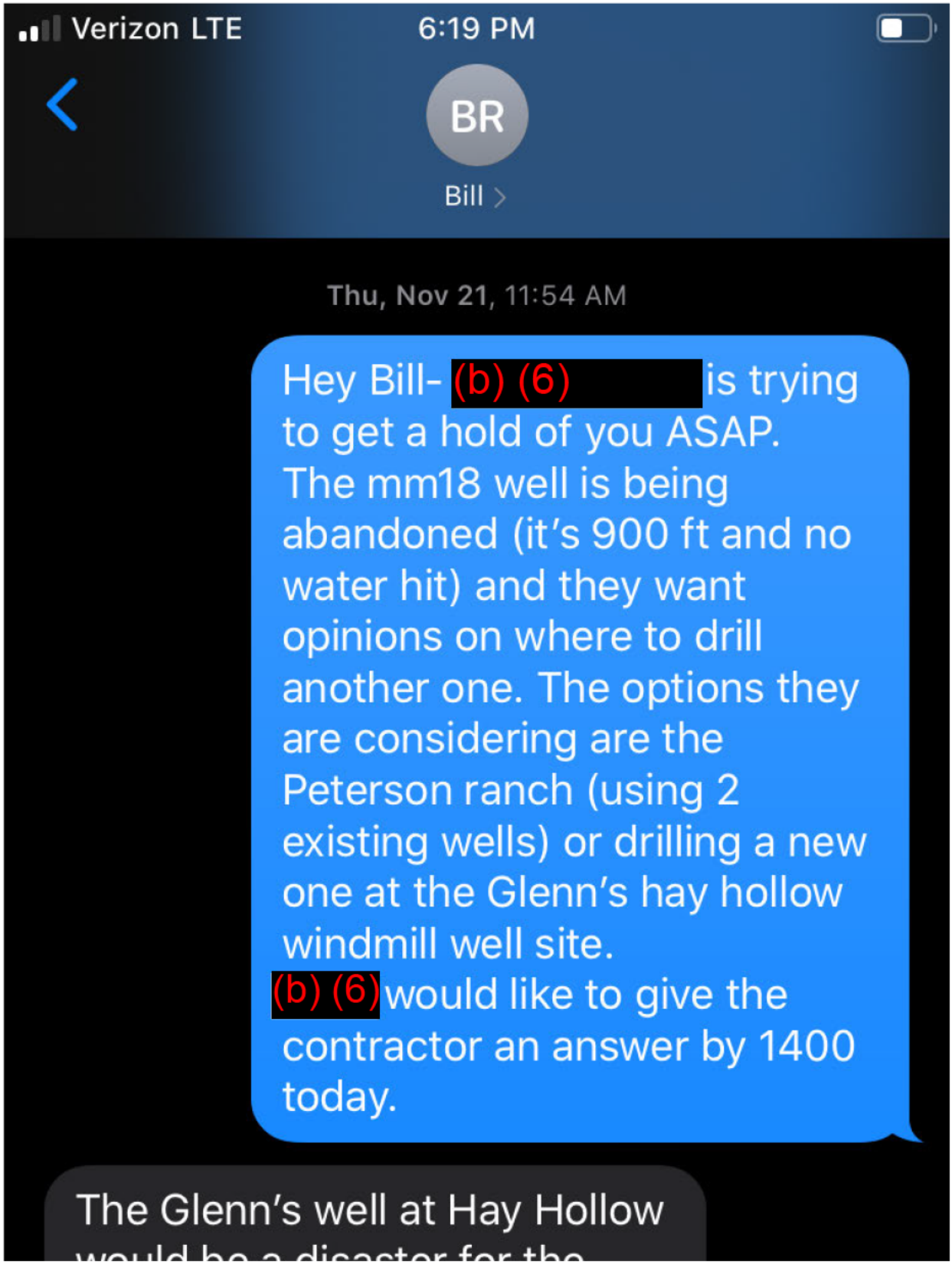
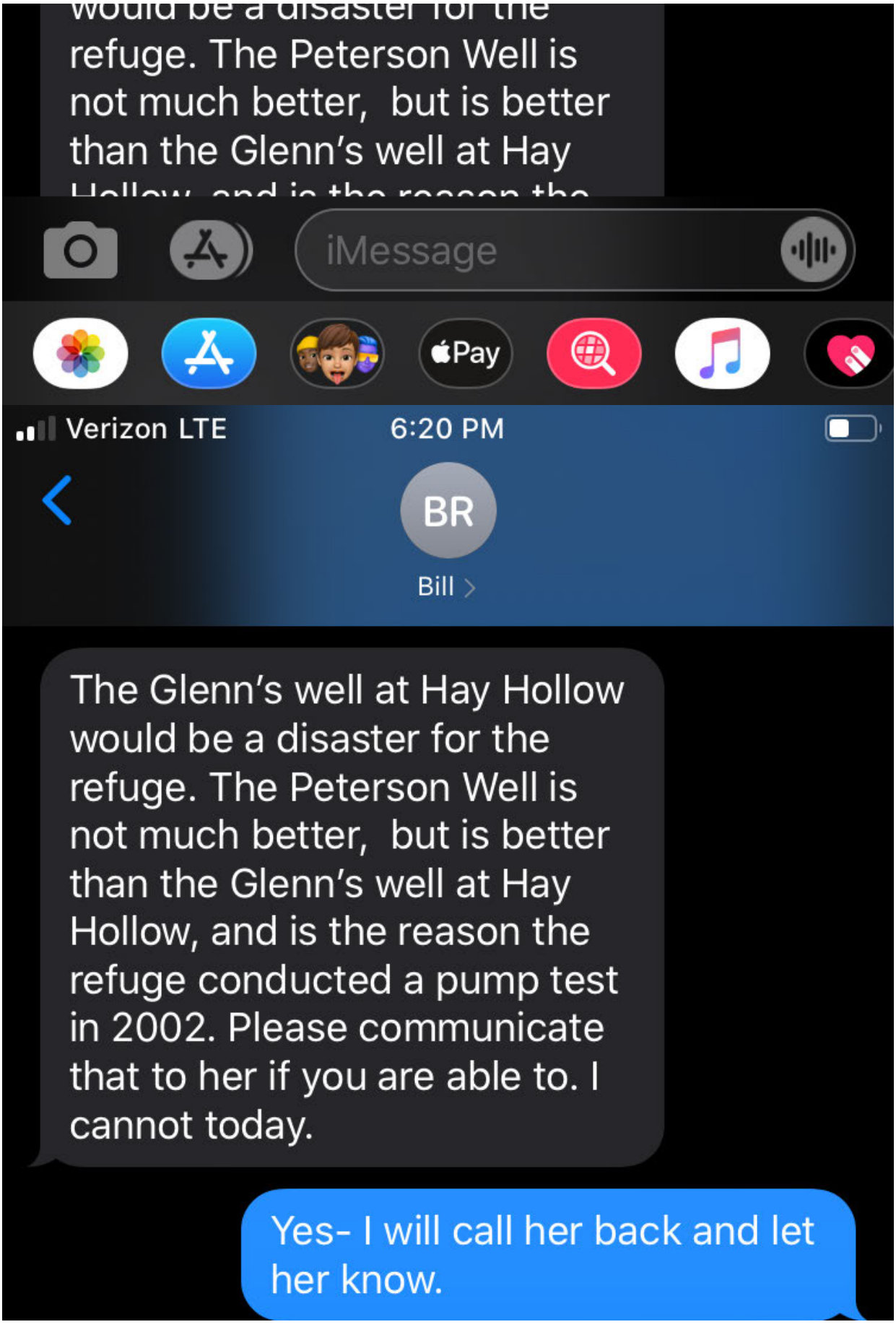
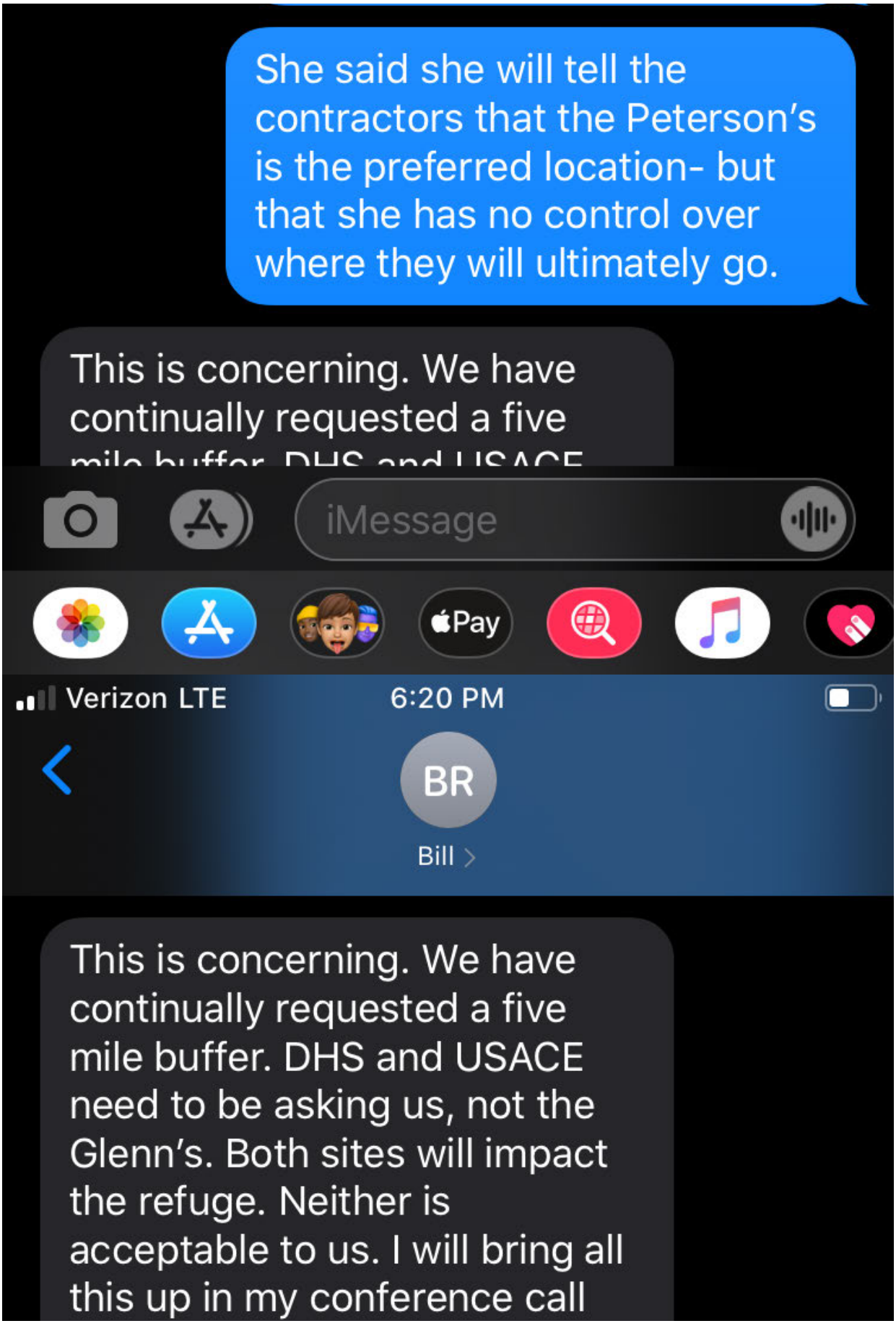
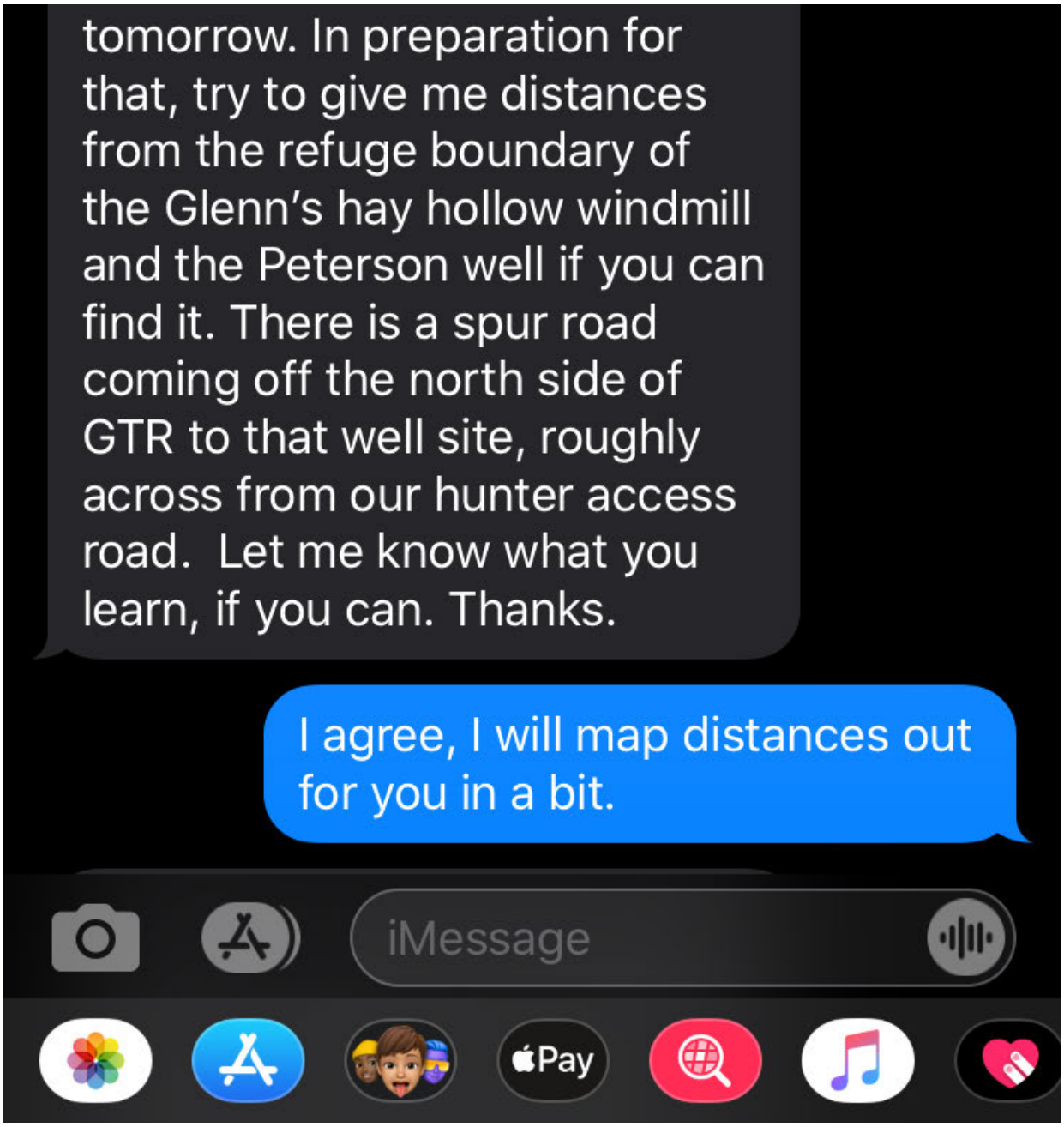
Fax: 520-364-2130

From: Tasha Harden
To: tasha_harden@fws.gov
Date: Monday, December 16, 2019 7:23:00 AM
Attachments: image0.png
image1.png
image2.png




would be a disaster for the
refuge. The Peterson Well is not much better, but is better than the Glenn's well at Hay
iMessage
Pay
Verizon LTE
6:20 PM
BR
Bill
The Glenn's well at Hay Hollow would be a disaster for the refuge. The Peterson Well is not much better, but is better than the Glenn's well at Hay Hollow, and is the reason the refuge conducted a pump test in 2002. Please communicate that to her if you are able to. I cannot today.
Yes- I will call her back and let her know.


She said she will tell the contractors that the Peterson's is the preferred location- but that she has no control over where they will ultimately go.
This is concerning. We have continually requested a five
iMessage
Pay
Verizon LTE
6:20 PM
BR
Bill
This is concerning. We have continually requested a five mile buffer. DHS and USACE need to be asking us, not the Glenn's. Both sites will impact the refuge. Neither is acceptable to us. I will bring all this up in my conference call



Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

From: Walker, Cassondra
To: Darrell Kundargi; Baca, Joaquin
Subject: Map of SBNWR
Date: Monday, December 30, 2019 2:53:10 PM
Attachments: SanB_Wells and Ponds.pdf

Here is a map of some of the wells, I will update it (Hay Hollow and Bunting/North well are not on here) and also send coordinates tomorrow.

Cass

--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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From: Harden, Tasha
To: Bill Radke
Subject: more info for meeting?
Date: Friday, November 22, 2019 8:10:18 AM
Attachments: Hay Hollow Upstream.png

Attached is an overall pic showing relation of the proposed wells

And Cass pumped out a quick graph showing depth and pressure from one HH monitoring well- clearly the depth to water has been increasing over the years but it is extremely exaggerated this year, with a very large variation... the only changed variable is the recent huge increase in local water use.

--
Tasha Harden
Assistant Manager

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Douglas AZ 85608
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Cell: 520-368-6004
Fax: 520-364-2130

From:	Walker, Cassondra
To:	Darrell Kundargi; Baca, Joaquin; Harden, Tasha
Subject:	More water questions...
Date:	Wednesday, January 8, 2020 9:54:03 AM
Attachments:	mit_hour.png HHD.zip HHU.zip HHP.zip

Hi Darrell,

A couple more questions for you:

1. I've attached all of the transducer history through 31 Dec 19 for the three Hay Hollow Monitoring Wells: Hay Hollow Ponds (HHP), Hay Hollow Upstream (HHU), and Hay Hollow Downstream (HHD). I still have not been able to get access to the WISKI database and since the Macro needed to convert the data does not work for Pressure, I thought I would send it your way so that you could get started on it rather than wait for me. Is there anything else you need me to send?

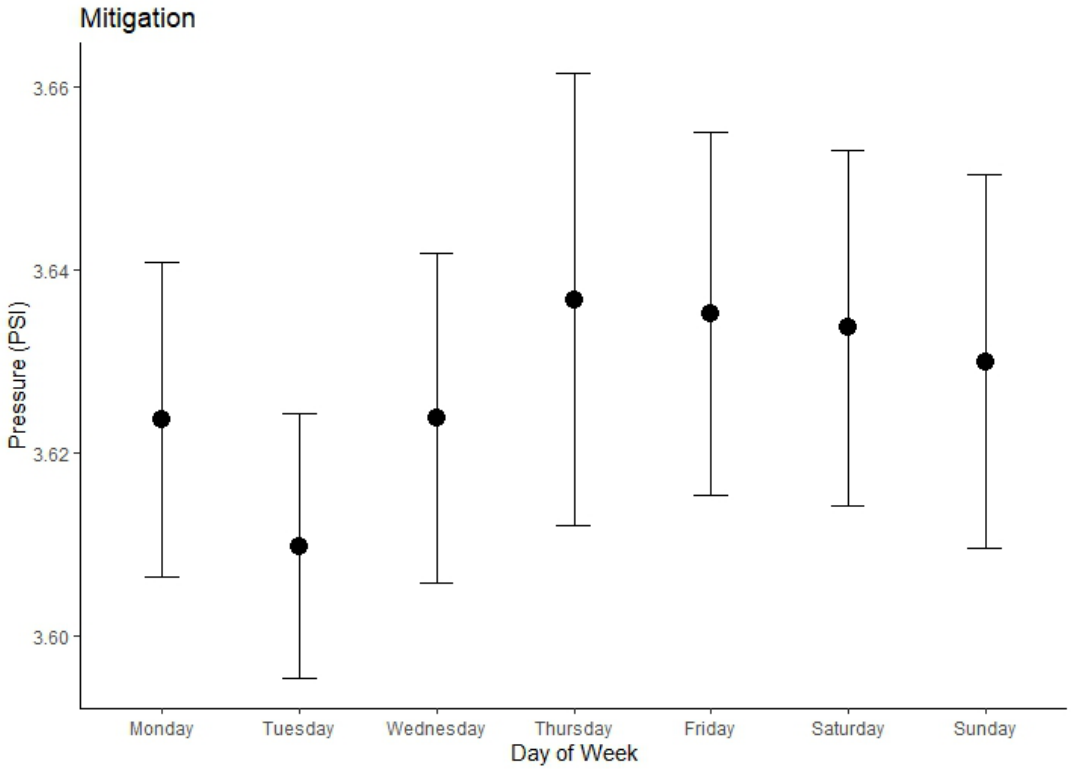
2. The bucket flow test is only for the wells we are monitoring (Hay Hollow, Mitigation, Twin, and Bunting), is that correct?

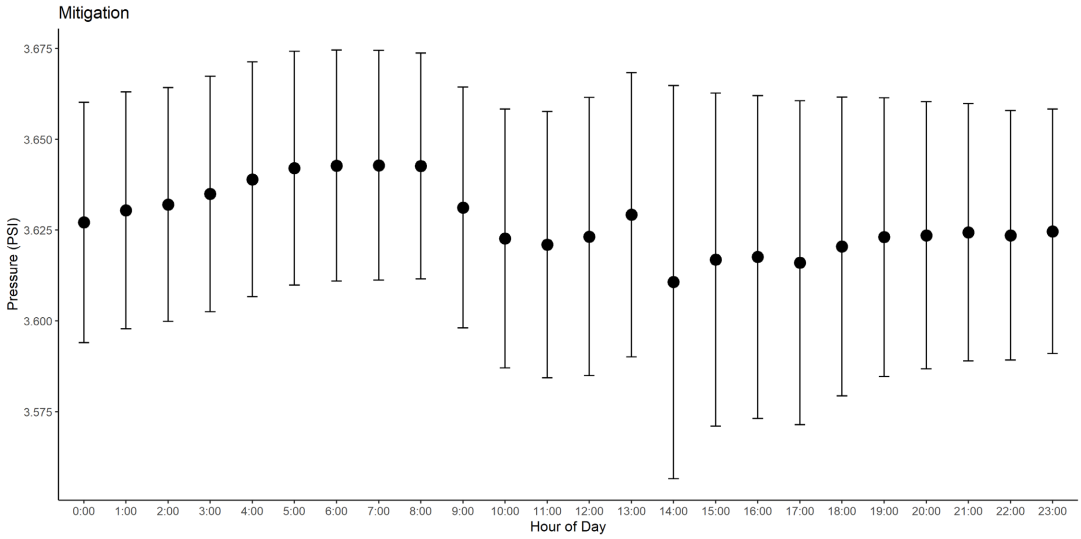
3. The bucket flow data that we collect...is that to model the bias between the two measurements (bucket and flow meter) so that you can correct the flow meter readings for the model? Or are we collecting weekly bucket flow and meter readings indefinitely? I just want to make sure that I understand what data collection regimen is for the foreseeable future so I can adjust my schedule.

4. Do want me to email the weekly data from the well transducers (artesian pressure and monitoring wells)? Or would you prefer a different timetable (monthly)?

5. Tasha and I were looking over Mitigation pressure data at the daily and hourly level and were wondering if you had an idea as to what a "significant" change in pressure would look like? In the following graphs there is some interesting trends in pressure readings, but the differences are not very large (0.02 psi) so we were unsure how to interpret them. What are your thoughts?

Graphs show daily and hourly means (29 Nov - 03 Jan) with 95% confidence intervals.





Thanks,
Cass

--

Cassondra Walker, PhD
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Douglas AZ 85608

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Cell: 520-368-6010
Fax: 520-364-2130

From: Radke, Bill
To: (b) (6)
Cc: (b) (6)
Subject: New Border Infrastructure Impacts on Slaughter Ranch
Date: Wednesday, September 18, 2019 7:36:09 AM
Attachments: Border Statement 5.6 mb.pdf

Hi Allan; Perhaps you are already well aware of the pending border infrastructure that is being constructed across the San Bernardino Valley. A major concern is the extraordinary volume of water that will be pumped to support this construction activity (DHS - Department of Homeland Security - has reported expected volumes ranging between 83,000 - 700,000 gallons per day to support their concrete batch plant and road maintenance activities). The well contractors plan to use is the one just south of Geronimo Trail Road on the Malpai Ranch, just about 1.5-miles west of House Pond on Slaughter Ranch. While the Fish and Wildlife Service is currently working to try and model how such water use will impact the groundwater aquifer on the refuge and on Slaughter Ranch, there are many unknowns that are not being effectively analyzed by DHS. If you have information pertaining to expected water use, how that use may affect Slaughter Ranch domestic water supplies, or if you observe a decline in pond levels, water flow, etc., please provide me that information. It may help us develop a better risk assessment. I am attaching the risk assessment information developed for the Organ Pipe National Park area for your information. Thank you, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From:	Walker, Cassondra
To:	Baca, Joaquin; Darrell Kundargi; Harden, Tasha
Subject:	Old Pressure Data
Date:	Saturday, January 4, 2020 8:53:30 AM
Attachments:	Bunting_7Dec04_5Apr05.xls Twin2_7Dec04_5Apr05.xls Hackberry_10Sep07_30Jan08.xls Hackberry_30Jan08_27Feb08.xls Hackberry_30Jun08_15Sep08.xls Hackberry_15Sep08_5Nov08.xls Hackberry_5Nov08_28Jan09.xls Hackberry_28Jan09_21May09.xls Oasis_10Sep07_30Jan08.xls Oasis_30Jan08_27Feb08.xls Oasis_30Jun08_5Nov08.xls Oasis_5Nov08_28Jan09.xls Oasis_28Jan09_21May09.xls HH_windmill_4Apr06_13Jun06.xls East_Border_Well_8Dec04_5Apr05.xls

---

Hi Joaquin,

Here is some old pressure data that I found on our old well monitoring laptop. I figured this might be useful. Here is what I'm sending you:

Current Wells on Refuge
Bunting Well: 7 Dec 04 - 5 Apr 05
Twin: 7 Dec 04 - 5 Apr 05
Hackberry: 10 Sep 07 - 30 Jan 08
Hackberry: 30 Jan 08 - 27 Feb 08
Hackberry: 30 Jun 08 - 15 Sep 08
Hackberry: 15 Sep 08 - 5 Nov 08
Hackberry: 5 Nov 08 - 28 Jan 09
Hackberry: 28 Jan 09 - 21 May 09
Oasis: 10 Sept 07 - 30 Jan 08
Oasis: 30 Jan 08 - 27 Feb 08
Oasis: 30 Jun 08 - 5 Nov 08
Oasis: 5 Nov 08 - 28 Jan 09
Oasis: 28 Jan 09 - 21 May 09

Abandoned Wells
Hay Hollow Windmill: 4 Apr 06 - 13 Jun 06 (near Hay Hollow)
East Border Well: 8 Dec 04 - 5 Apr 05 (near Robertson Well)

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Fax: 520-364-2130

From:	Walker, Cassondra
To:	Baca, Joaquin; Darrell Kundargi; Harden, Tasha
Subject:	Old Pressure Data
Date:	Saturday, January 4, 2020 8:53:31 AM
Attachments:	Bunting_7Dec04_5Apr05.xls Twin2_7Dec04_5Apr05.xls Hackberry_10Sep07_30Jan08.xls Hackberry_30Jan08_27Feb08.xls Hackberry_30Jun08_15Sep08.xls Hackberry_15Sep08_5Nov08.xls Hackberry_5Nov08_28Jan09.xls Hackberry_28Jan09_21May09.xls Oasis_10Sep07_30Jan08.xls Oasis_30Jan08_27Feb08.xls Oasis_30Jun08_5Nov08.xls Oasis_5Nov08_28Jan09.xls Oasis_28Jan09_21May09.xls HH_windmill_4Apr06_13Jun06.xls East_Border_Well_8Dec04_5Apr05.xls

---

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Current Wells on Refuge
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Hackberry: 28 Jan 09 - 21 May 09
Oasis: 10 Sept 07 - 30 Jan 08
Oasis: 30 Jan 08 - 27 Feb 08
Oasis: 30 Jun 08 - 5 Nov 08
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Oasis: 28 Jan 09 - 21 May 09

Abandoned Wells
Hay Hollow Windmill: 4 Apr 06 - 13 Jun 06 (near Hay Hollow)
East Border Well: 8 Dec 04 - 5 Apr 05 (near Robertson Well)

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Cell: 520-368-6010

Fax: 520-364-2130

From: Walker, Cassondra
To: Harden, Tasha
Subject: pond levels up to 20 Dec
Date: Saturday, December 21, 2019 7:52:24 AM
Attachments: Pond_Levels.docx

I added all of this years pond level data to Survey 1,2,3, and made new graphs up to the latest measurements on 20 Dec. I added a space to bullet point dates or other information that we want to highlight. My plan is to just add on to this each week. Let me know if you want me to change anything. I will work on well tape measurements over the next few days and provide the same layout.

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
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Cell: 520-368-6010
Fax: 520-364-2130

From: Cassondra Walker
To: bill_radke@fws.gov; tasha_harden@fws.gov
Subject: Pump at MM 9
Date: Monday, December 16, 2019 3:37:24 PM

New stuff at the small pond at MM 9

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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7628 N Hwy 191
Douglas, AZ 85608

Cell: 520-368-6010

From: Elder, Mary M
To: Fernandez, Juliette
Cc: Humphrey, Jeff; Morales, Alejandro A; Ullenberg, Beth
Subject: Re: [EXTERNAL] AZ Republic reporter with a question
Date: Thursday, January 2, 2020 3:53:38 PM

Thanks.

On Thu, Jan 2, 2020 at 12:58 PM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> We will need to refer them to NPS. Quitobaquito is on Organ Pipe National Monument.
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 6,7,8 Connects

On Thu, Jan 2, 2020 at 8:07 AM Elder, Mary <mary_elder@fws.gov> wrote:

> Good morning. I'm not sure of the current status of this issue, and it may be that we need to refer them to NPS to respond regarding their monitoring plan? Jeff or Juliette, can you advise of the current status? Beth may be aware but won't be back until Monday and I didn't want to hold it until then, in case you need to do some research.
>
> Thanks.
>
> ME
>
> ---------- Forwarded message ---------
> From: **Cordova, Miguel** <miguel_cordova@fws.gov>
> Date: Tue, Dec 31, 2019 at 12:35 PM
> Subject: Re: [EXTERNAL] AZ Republic reporter with a question
> To: Stone, Erin <Erin.Stone@arizonarepublic.com>
> Cc: Beth Ullenberg <beth_ullenberg@fws.gov>, Mary Elder <mary_elder@fws.gov>
>
> Hello Erin,
> I am sending this to Mary Elder to assist you with this request. She is probably the only one with this knowledge besides Beth. She will be in on thursday. Sorry i couldn't be any more help.

On Tue, Dec 31, 2019 at 11:59 AM Stone, Erin <Erin.Stone@arizonarepublic.com> wrote:

Hi Miguel,

My name is Erin Stone and I'm a reporter with The Arizona Republic. I'd been in contact with Beth Ullenberg, but I saw she's out of the office so am forwarding the below request to you. Would it be possible to get this info by early next week?
Thank you!
Erin

From: Stone, Erin <Erin.Stone@arizonarepublic.com>
Sent: Tuesday, December 31, 2019 11:57 AM
To: Ullenberg, Beth <beth_ullenberg@fws.gov>
Subject: Re: [EXTERNAL] RE: AZ Republic reporter with a question

Hi Beth,

I guess Carlos has left CBP! I was able to get in touch with someone else though, so thank you for your help.

I had some additional questions I was hoping to get your help with:

I was told by CBP that NPS will be monitoring groundwater levels near Quitobaquito Springs as pumping continues for border wall construction. Can you provide a detailed plan of how NPS will be monitoring water levels, as well as information about current monitoring status and any data about water levels you may have since drilling began?

Thanks so much,
Erin

From: Ullenberg, Beth <beth_ullenberg@fws.gov>
Sent: Thursday, December 19, 2019 3:10 PM
To: Stone, Erin <Erin.Stone@arizonarepublic.com>
Subject: Re: [EXTERNAL] RE: AZ Republic reporter with a question

Here is the only other email address I have. Hope this helps.

cbpmediarelations@cbp.dhs.gov

Beth Ullenberg, External Affairs
U.S. Fish and Wildlife Service
P.O. Box 1306
Dennis Chavez Federal Building

Albuquerque, NM 87103
505-248-6638 office
505-414-3815 mobile

"The mission of the U.S. Fish and Wildlife Service is, working with others, to conserve, protect, and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people"

On Thu, Dec 19, 2019 at 3:03 PM Stone, Erin <Erin.Stone@arizonarepublic.com> wrote:

> Hi Beth,
>
> Thank you for your reply. Is there any other email for Carlos? That email doesn't seem to be deliverable.
> Thanks!
> Erin
>
> **From:** Ullenberg, Beth <beth_ullenberg@fws.gov>
> **Sent:** Thursday, December 19, 2019 2:42 PM
> **To:** Stone, Erin <Erin.Stone@arizonarepublic.com>
> **Subject:** RE: AZ Republic reporter with a question
>
> Erin,
>
> Thank you for your inquiry. The U.S. Fish and Wildlife Service is coordinating with the Department of Homeland Security on barrier construction at national wildlife refuges along the United States-Mexico border. Customs and Border Protection and the U.S. Army Corps of Engineers are working closely with U.S. Fish and Wildlife Service to mitigate the impacts of groundwater use for barrier projects such as identifying avoidance areas for well locations. Please contact Customs and Border Protection for locations of wells within their project areas. A good contact is Carlos Diaz, CBP Office of Public Affairs – Southwest Border Branch Chief at Office: 202-325-3018 or Carlos.A.Diaz@cbp.dhs.gov
>
> Best Regards,
>
> Beth Ullenberg, External Affairs
> U.S. Fish and Wildlife Service
> P.O. Box 1306
> Dennis Chavez Federal Building
> Albuquerque, NM 87103
> 505-248-6638 office
> 505-414-3815 mobile
>
> "The mission of the U.S. Fish and Wildlife Service is, working with others, to conserve, protect, and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people"

--

Miguel Cordova, Executive Assistant
External Affairs
U.S. Fish and Wildlife Service
P.O. Box 1306, Room 8024
Albuquerque, NM 87102
505-248-6912

--
Mary Elder
Assistant Regional Director-External Affairs
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505.248.6285 (desk)
505.967.7426 (cell)
mary_elder@fws.gov

--
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505.248.6285 (desk)
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mary_elder@fws.gov

From: rod dossey
To: Tasha Harden
Subject: Re: [EXTERNAL] Black Draw
Date: Friday, December 27, 2019 11:18:25 AM

Thank you Tasha

Get Outlook for iOS

From: Tasha Harden <tasha_harden@fws.gov>
Sent: Friday, December 27, 2019 10:09:42 AM
To: rod dossey <rod@bio-studies.com>
Subject: Re: [EXTERNAL] Black Draw

Hey Rod!
It went good. There is plenty of water in the same spot they put fish last time- so Carl can use the same area :) any other questions just ask!

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

> On Dec 26, 2019, at 12:08 PM, rod dossey <rod@bio-studies.com> wrote:
>
> How did your site visit go on Monday?
>
> Rod Dossey
> Senior Biologist
> Office: (760) 916-1995 xt: 703
> Cell: (858)776-7444
> <image001.png>

From: McIntyre, Julie
To: (b) (6), (b) (7)(C)
Cc: brent_range@ios.doi.gov; Mary_Elder@fws.gov; Beth_ullenberg@fws.gov; Aislinn_Maestas@fws.gov; tlthomas@usbr.gov; cwallis@usbr.gov; jvalentine@blm.gov; (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); (b) (6), (b) (7)(C); milo.booth@bia.gov; KERWIN, SARA (CTR); erin_fernandez@fws.gov; marco_deleon@nps.gov; Amanda Roberts; Lester, Emily A CIV USARMY CESPL (USA); Barnes, Michelle L CIV USARMY CESPL (US); Busse, John CIV USARMY CEHQ (USA); (b) (6), (b) (7)(C)
Bcc: bill_radke@fws.gov
Subject: Re: [EXTERNAL] CBP/DOI & FWS Border Wall Coordination Call
Date: Wednesday, November 6, 2019 12:09:42 PM
Attachments: SupportGemsOfTheSonoranDesert2019.pdf

Hi All,

Per our call today, please find the document I mentioned attached below.

Cheers,
Julie

On Tue, Nov 5, 2019 at 10:39 AM (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C)> wrote:

> PURPOSE:
>
> The purpose of this call is to share border wall program and project information with the Department of Interior to ensure consistent and timely external messaging.
>
> *PLEASE FORWARD to anyone who needs to be added (for any questions on the invitation list or to add someone permanently to the invite and distros, please reach out Sara Kerwin)

--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: Kundargi, Darrell
To: Tasha Harden
Cc: Joaquin Baca; Monty Mcdaniel; Cassondra Walker
Subject: Re: [EXTERNAL] Flowmeter quote Attached
Date: Monday, December 30, 2019 1:42:31 PM

That's okay, as long as we can monitor flow on your five artesian wells.

DK

On Mon, Dec 30, 2019 at 1:14 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> It was brought to my attention today that the owners of Slaughter Ranch do not want us monitoring their use with a flow meter... this may change but is a no go for now. They are still ok with us having a transducer on it and taking depth to water readings.
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> On Dec 27, 2019, at 5:47 PM, tasha_harden@fws.gov wrote:
>
> Darrell- Please see forwarded email regarding slaughter ranch well. Again- Monty has done most the figuring out for this. If you have questions just ask!
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> Begin forwarded message:
>
> **From:** "Mcdaniel, Monty" <monty_mcdaniel@fws.gov>
> **Date:** December 26, 2019 at 2:26:34 PM MST
> **To:** "Harden, Tasha" <tasha_harden@fws.gov>
> **Subject: Fwd: [EXTERNAL] Flowmeter quote Attached**
>
> Tasha,
> Here are the options on the 1" meter to be installed at SR. I'm OK with either option.

Thanks,
Monty

---------- Forwarded message ---------
From: **Sales - GPImeters** <sales@gpimeters.com>
Date: Tue, Dec 24, 2019 at 9:15 AM
Subject: Re: [EXTERNAL] Flowmeter quote Attached
To: Mcdaniel, Monty <monty_mcdaniel@fws.gov>

Monty,

Attached are the quotes and spec sheets for the meters we discussed.

The one for the small 1" household meter is an either/or with the recommended meter able to register those low flows listed 2nd.

Feel free to give me a call to discuss this further if you need to, we are finishing up for the holidays now (20 minutes more then off the rest of the day) but will be back for Thursday & Friday this week and are working next week on Monday, Thursday & Friday 8:30 to 4:45 EST.

Best Regards!
Tom Hill
Sales Dept

GPImeters.com
21 Gail Ct. Sparta, NJ 07871 USA
PH 888-722-3569 973-940-1684
FX 973-940-1651
sales@GPImeters.com | www.GPImeters.com

Order directly from GPImeters.com. We are an Authorized Stocking Distributor of Great Plains Industries and Flomec Meters.

On Tue, Dec 24, 2019 at 8:32 AM Sales - GPImeters <sales@gpimeters.com> wrote:

> Monty,
>
> Yesterday was really busy but I have my assistant Sarah on it for today. Should be there in an hour or so.
>
> ***Best Regards!***
> ***Tom Hill***
> ***Sales Dept***

GPImeters.com
21 Gail Ct. Sparta, NJ 07871 USA
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FX 973-940-1651
sales@GPImeters.com | www.GPImeters.com

Order directly from GPImeters.com. We are an Authorized Stocking Distributor of Great Plains Industries and Flomec Meters.

On Mon, Dec 23, 2019 at 5:36 PM Mcdaniel, Monty <monty_mcdaniel@fws.gov> wrote:

> Hello Tom,
> I spoke to you this morning about some meters. Just want to make sure you have my correct email.
> Thanks and hope you have a happy holiday break,
> Monty
>
> On Thu, Oct 24, 2019 at 11:32 AM Sales - GPImeters <sales@gpimeters.com> wrote:
>
> > Monty,
> >
> > Thanks for the inquiry today.
> >
> > The attached quote & spec sheet are for the meters we spoke of earlier today.
> >
> > If your Finance/Administrator orders these by tomorrow they should be shipped for delivery next week. If there is a delay then the following week.
> >
> > ***Best Regards!***
> > ***Tom Hill***
> > ***Sales Dept***
> >
> > ***GPImeters.com***
> > 21 Gail Ct. Sparta, NJ 07871 USA
> > PH 888-722-3569 973-940-1684
> > FX 973-940-1651
> > sales@GPImeters.com | www.GPImeters.com
> >
> > *Order directly from GPImeters.com. We are an Authorized Stocking Distributor of Great Plains Industries and Flomec Meters.*

--
Monty McDaniel

> > Maintenance
> > San Bernardino NWR
> > (520) 954-0170
>
> --
> Monty McDaniel
> Maintenance
> San Bernardino NWR
> (520) 954-0170
>
> <US Fish & Wildlife Service 1 Inch 11-24-2019.pdf>

--

****

Darrell Kundargi
Hydrologist
Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW
Albuquerque, NM 87102

Ph: (505) 248-6430
Cell: (505) 362-3075
www.facebook.com/USFWS Water Resources

From: Radke, Bill
To: Baca, Joaquin
Cc: Juliette Fernandez
Subject: Re: [EXTERNAL] FW: Tucson 3 - SWVC-Well Readings
Date: Wednesday, December 18, 2019 7:07:39 AM

Joaquin; I agree with you that we can assume from the information provided by USACE, which closely matches the limited first hand information we already possess, that the flow meter counter started at zero. We still do not know how many days each week the contractors pump water, and that is rather crucial in determining gallons pumped per day. However, USACE tells us the contractors currently work five days a week, and while that has not been verified (and some conflicting information exists), it is the "best" information presently being made available to us so we should use that number. Thanks for all your help with this, Bill Radke

On Wed, Dec 18, 2019 at 6:50 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Morning,
>
> I will plug in the new numbers. The chart shows a total usage of 1.8mgal for August - September, without other wise being said, I assume this to mean the counter started at zero. These numbers also appear to correlate with photos of the totalizer taken in October and December of this year.
>
> On Tue, Dec 17, 2019 at 12:40 PM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:
>
> > Can we work to model this using their numbers? I think it would be good to provide them periodic updates. Can we maybe pull together a status update bi-weekly or so? Is that doable?
> >
> > **Juliette Fernandez**
> > Refuge Supervisor AZ/NM
> >
> > 505-248-6650 Office
> > 505-933-3501 Cell
> > 505-248-6460 Fax
> >
> > U.S. Fish and Wildlife Service
> > P.O. Box 1306, Room 4112
> > Albuquerque, NM 87103-1306
> >
> > Region 6,7,8 Connects
> >
> > ---------- Forwarded message ---------
> > From: **Lester, Emily A CIV USARMY CESPL (USA)** <Emily.A.Lester@usace.army.mil>
> > Date: Mon, Dec 16, 2019 at 5:21 PM

Subject: [EXTERNAL] FW: Tucson 3 - SWVC-Well Readings
To: Fernandez, Juliette <juliette_fernandez@fws.gov>
Cc: Joaquin Baca <joaquin_baca@fws.gov>, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >, David Boyes <dboyes@dawson8a.com>, Nick <nbillstrand@northlandresearch.com>, Bill Radke <bill_radke@fws.gov>

Hello Juliette,

Please see attached for the Glen Ranch well meter information provided by the contractor and the USACE construction team. The Glen Ranch well is the private well leased by the contractor within proximity to the SBNWR on Tucson 3 Border Barrier project near Douglas. This is currently being reported on a monthly basis.

Please let me know if you and your team may have any updated monitoring information or new developments in the field which I may provide to the team.

Thank you for your time,

Emily

Emily Lester
NEPA Compliance Officer
Task Force Barrier
US Army Corps of Engineers
Emily.A.Lester@usace.army.mil

Tel: 602.230.6995 Office
Tel: 213.479.2132 Mobile

Building Strong!

********** This information is For Official Use Only. The contents of this email, including any attachments, must not be disclosed, directly or indirectly, to any person not authorized by the agency to receive such information. Unauthorized disclosure of such information may subject the individual making the release to civil and criminal penalties. See, e.g., 18 U.S.C. § 641; 5 C.F.R. § 2635.703. **********

-----Original Message-----
From: Nelson, Jeremy M SFC USARMY (USA)
Sent: Monday, December 16, 2019 5:10 PM
To: Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil>
Subject: Tucson 3 - SWVC-Well Readings

Emily,

> See attached I received from the KTR on the readings they have been recording by month. If you have any questions let me know.
>
> V/R
>
> Jeremy M. Nelson
> Project Engineer/Sr ConRep
> Task Force Barrier
> Douglas, AZ
> Cell - (b) (6)
> Jeremy.M.Nelson@usace.army.mil

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Bill Radke
To: Walker, Cassondra
Cc: Tasha Dolgoff; Scott Harden
Subject: Re: [EXTERNAL] Fwd: Inventory and Measure San Bernardino Wildlife Refuge
Date: Thursday, November 7, 2019 10:57:06 AM

Cassondra.Thank you for working with Aaron from ADWR. Here's what I can tell from your maps:

The pink dots are unknown to me, except for the Robertson Cienega well which is one the state periodically measures. Maybe coordinates are off for these other pink dots, but they just don't match with what I am aware of.

The white dots are all our monitoring wells, and we can provide them data and we will continue to monitor those wells. ADWR can monitor them also if they want to.

The red dots seem to me to be either wrong, perhaps bad coordinates, legally previously abandoned, or are otherwise unknown to me.

The black triangles are not all valid. Perhaps the coordinates are off and they actually overlap with some of our white dot wells. Also, some of these black triangles are valid, but are springs and seeps rather than wells.

The state-provided coordinates/maps show "55-" well registers numbers that we can check on. Those mostly unorganized well files are in the paired gray file cabinets (in the left cabinet) on the south side of Brendas office next to the safe.

In my office, rolled up as a large ratty map kind of next to my printer, is a map that depicts well locations and might have the associated well register numbers. God luck hunting.

The Leslie Canyon we'll map looks accurate to me and depicts monitoring wells that I am a aware of. The downstream wells are dry and really never had water to measure (one is nearly under and a bit downstream from the bridge on the east bank. The other is further downstream and on the West Bank. The other ones are those that we monitor. ADWR has a transducer in the one along our east boundary that has an antenna on the well. The one on private land is a monitoring well we drilled, but no longer access.

Finally, while we can give permission to coordinate access and monitoring of refuge wells on refuge lands, Adam must get permission from landowners of the private land wells he is interested in (Slaughter Ranch Snail Spring well for example). Be sure he is aware of that.

Again, thank you for researching and coordinating this monitoring. You have my support of this work, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Nov 7, 2019, at 10:11 AM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:

Hey Bill,

I wanted to give you a status update on the state's efforts to monitor our wells. I was contacted by a guy named Aaron to come monitor the wells. We agreed to go out on Friday. He sent me info on the wells that they are wanting to monitor (below in email chain). I have two topo maps (one for each refuge) with well locations on them and also some well documentation from when the wells were drilled. I georeferenced the topo map for San B so I could try to get a better idea of what wells they want to monitor. After doing this, I added the wells that I monitor, the coordinates of other wells that used to be on the refuge, and coordinates from the well documentation that I could find. I created a map (below, and attached) and as you can see there is a lot of discrepancies in where wells are located. I'm fairly certain that one of the wells is Spring Snail well, but the rest I'm not really sure. Do you happen to know of any other secret well locations that might explain the locations that they have.

For Leslie Canyon, I do not have a map because I do not have imagery associated with a reference system to use to georeference their topo map. However, from the coordinates it looks like 99Bar and BarBoot are on the list.

After talking with Tasha, I'm going to explain to them that I don't know where all of these wells are and see what they want to do. Hopefully, they will be fine with just monitoring the wells I already check. I'm happy to help them search for these other wells, but I don't think it will do much good. Do you have any further guidance on how you want me to handle this?

<StateLocations for SanB_wells.jpg>

---------- Forwarded message ---------
From: **Aaron Stolley** <adstolley@azwater.gov>
Date: Wed, Nov 6, 2019 at 6:44 PM
Subject: [EXTERNAL] Fwd: Inventory and Measure San Bernardino Wildlife Refuge
To: cassondra_walker@fws.gov <cassondra_walker@fws.gov>

---------- Forwarded message ---------
From: **Teri Davis** <tddavis@azwater.gov>
Date: Tue, Nov 5, 2019 at 1:02 PM
Subject: Inventory and Measure San Bernardino Wildlife Refuge
To: Aaron Stolley <adstolley@azwater.gov>
CC: Scott Stuk <sstuk@azwater.gov>, James Dieckhoff <jdieckhoff@azwater.gov>, Paul A. Ivanich <paivanich@azwater.gov>

Hi Aaron,

If you have time, please inventory and measure the following wells; image records and snip map are attached:
San Bernardino Wildlife Refuge
55-552204
55-552202
55-552203
55-212321
55-212326
55-212327
55-552201
Leslie Canyon NWR
55-589794 Already in GWSI - 313523109293101, D-21-28 21ADC just update and get WL

Also, check to see if we can add back in. Master scan attached
312003109154601- BK00

This is in response to the water being used to build the border wall and production wells declining WLs. THANKS!

<image.png>

<image.png>

--

Teri D. Davis R.G., Manager

Field Services Section, Hydrology Division

Arizona Department of Water Resources

1110 W Washington St Suite 310

Phoenix, AZ 85007

(602) 679-0932 cell

tddavis@azwater.gov

--

Aaron Stolley

Basic Data Unit Team Lead

Arizona Department of Water Resources

Office: (602) 771-8734

Cell: (602) 525-0442

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

<212326.pdf>

<212327.pdf>

<552201.pdf>

<55-589794.pdf>

<212321.pdf>

<552203.pdf>

<552202.pdf>

<552204.pdf>

<312003109154601.pdf>

<StateLocations for SanB_wells.pdf>

From: Fernandez, Juliette
To: Bill Radke
Subject: Re: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
Date: Monday, November 25, 2019 12:35:16 PM

Hi Bill,
I know you haven't worked with them directly. I believe she has been speaking with neighboring ranches. Just wanted to give you a heads up and give you an opportunity so address anything via phone call should you have additional thoughts that might come up.

Thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Mon, Nov 25, 2019 at 12:32 PM Bill Radke <bill_radke@fws.gov> wrote:

> Juliette; The only way I know that Congresswoman Kirkpatrick has any interest in SBNWR is the email from you identifying the possibility of a congressional aide visit to the refuge (which never happened as far as I am aware).
>
> Neither I not any of my staff have communicated with the Congresswoman in any format. Her points seem to come from videos and/or news stories that neither I nor any of my staff were involved with. We have not communicated with any press, have worked through Region-2 (Beth) to deal with inquiries, and have responded to two pertinent FOIA requests through Monica.
>
> The potential impacts to SBNWR and Organ Pipe National Park are recognized by non-governmental organizations. I agree that all the points raised in the letter seem to be pretty accurate, and the concerns she raises all seem to be valid. She is not asking FWS for any information that we can address.
>
> Thanks for the heads up on this, Bill
>
> William R. Radke; Project Leader
> U.S.Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> Cell: 520 508-7180

On Nov 25, 2019, at 10:16 AM, Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

Let's have a call if you feel there is something significant in here that needs to be addressed.

Thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:10 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Mary Elder <mary_elder@fws.gov>, Aaron Archibeque <aaron_archibeque@fws.gov>, Juliette Fernandez <juliette_fernandez@fws.gov>, Beth Ullenberg <beth_ullenberg@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>, Seth Willey <seth_willey@fws.gov>, Steve Reagan <steve_reagan@fws.gov>

Good morning. I am forwarding a copy of the letter that Representative Kirkpatrick sent to CBP regarding border wall construction in her district and expressing her concern over activities near San Bernardino National Wildlife Refuge. She cc'd Aurelia Skipwith and USBP on the letter. I forwarded the letter to HQ CLA to ensure the Director's office receives a copy. Please let me know if you have any questions. Lesli

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:50 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: <emily.cummins@mail.house.gov>
Cc: <billy.kovacs@mail.house.gov>, Martin Kodis <Martin_Kodis@fws.gov>, Helfrich, Devin <devin_helfrich@fws.gov>

Hi Emily, thank you for your email. I have included Martin Kodis and Devin

Helfrich in our HQ Office of Congressional and Legislative Affairs on this reply to ensure that the Director's office receives a copy of this letter.

I hope you have a Happy Thanksgiving.

Best Regards,
Lesli

On Mon, Nov 25, 2019 at 10:04 AM Cummins, Emily <Emily.Cummins@mail.house.gov> wrote:

> Good morning Lesli,
>
> Please see attached letter addressed to CBP Acting Commissioner Morgan from Rep. Ann Kirkpatrick.
>
> This letter discusses the San Bernardino National Wildlife Refuge in Cochise, County, Arizona. We CC'd USFWS Director Aurelia Skipwith for her awareness.
>
> Can you please make sure that the director is notified of this letter? And can you also confirm with me that you received this email?
>
> Please let me know if there are any issues viewing this letter, or if I should contact anyone else within USFWS.
>
> Thank you so much. Have a good rest of your week and a Happy Thanksgiving.
>
> Best,
> Emily

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

--
Lesli A. Gray
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lesli_gray@fws.gov
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Emily Cummins
Legislative Assistant
Rep. Ann Kirkpatrick

Sent from my iPhone

<20191125 Kirkpatrick Letter- CBP.pdf>

From: McIntyre, Julie
To: Humphrey, Jeff
Cc: Bill Radke
Subject: Re: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
Date: Monday, November 25, 2019 1:41:17 PM
Attachments: FWS_SignedResponseLetterToCBP_PaulEnriquez_70482 (1) (1).pdf
FWS_EnclosureConservationMeasuresToCBP_PaulEnriquez_70482.docx

---

Thanks, Jeff.

This is VERY timely.

Please find our letter sent to CBP below, in case this is needed as a quick reference (it was signed by Seth acting as ARD in June). These suggested concerns and conservation measures were provided prior to discussions about well creation and use, as we did not realize that CBP would want wells every 5 miles along the border, and would be less than enthusiastic about trucking water beyond 2.5 miles. They are also fairly general, and we can quickly refine these if needed.

We continue to bring up the idea of trucking water for border cement/dust control (not to help replenish ponds, as Brent Range suggested) to avoid the need to use any well water within at least a 5 mile distance from the boundaries of SBNWR along the border.

Do you both think this is an opportunity to collaborate on a BP for RD? I am happy to lead that and open to other thoughts. Bill, am very interested in discussing with you first, and then working with Jeff H, Juliette, and possibly Brent to mobilize our thoughts and collaborate on a BP.

Will follow up with both of you....

Cheers,

Julie

On Mon, Nov 25, 2019 at 1:05 PM Humphrey, Jeff <jeff_humphrey@fws.gov> wrote:

> FYI.
>
> Jeff Humphrey (Field Supervisor)
> Arizona Ecological Services Office
> U.S. Fish and Wildlife Service
> 9828 North 31st Ave #C3
> Phoenix AZ 85051-2517
> office: 602-242-0210
> direct: 602-889-5958
> FAX: 602-242-2513
> http://www.fws.gov/southwest/es/arizona/
>
> ---------- Forwarded message ---------
> From: **Fasbender, Peter** <peter_fasbender@fws.gov>
> Date: Mon, Nov 25, 2019 at 11:49 AM

Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Jeff Humphrey <Jeff_Humphrey@fws.gov>, Willey, Seth <seth_willey@fws.gov>

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:10 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: Mary Elder <mary_elder@fws.gov>, Aaron Archibeque <aaron_archibeque@fws.gov>, Juliette Fernandez <juliette_fernandez@fws.gov>, Beth Ullenberg <beth_ullenberg@fws.gov>, Peter Fasbender <peter_fasbender@fws.gov>, Seth Willey <seth_willey@fws.gov>, Steve Reagan <steve_reagan@fws.gov>

Good morning. I am forwarding a copy of the letter that Representative Kirkpatrick sent to CBP regarding border wall construction in her district and expressing her concern over activities near San Bernardino National Wildlife Refuge. She cc'd Aurelia Skipwith and USBP on the letter. I forwarded the letter to HQ CLA to ensure the Director's office receives a copy. Please let me know if you have any questions. Lesli

---------- Forwarded message ---------
From: **Gray, Lesli** <lesli_gray@fws.gov>
Date: Mon, Nov 25, 2019 at 10:50 AM
Subject: Fwd: [EXTERNAL] Kirkpatrick Letter to CBP, cc USFWS
To: <emily.cummins@mail.house.gov>
Cc: <billy.kovacs@mail.house.gov>, Martin Kodis <Martin_Kodis@fws.gov>, Helfrich, Devin <devin_helfrich@fws.gov>

Hi Emily, thank you for your email. I have included Martin Kodis and Devin Helfrich in our HQ Office of Congressional and Legislative Affairs on this reply to ensure that the Director's office receives a copy of this letter.

I hope you have a Happy Thanksgiving.

Best Regards,
Lesli

On Mon, Nov 25, 2019 at 10:04 AM Cummins, Emily <Emily.Cummins@mail.house.gov> wrote:

> Good morning Lesli,
>
> Please see attached letter addressed to CBP Acting Commissioner Morgan from Rep. Ann Kirkpatrick.
>
> This letter discusses the San Bernardino National Wildlife Refuge in Cochise, County, Arizona. We CC'd USFWS Director Aurelia Skipwith for her awareness.

> Can you please make sure that the director is notified of this letter? And can you also confirm with me that you received this email?
>
> Please let me know if there are any issues viewing this letter, or if I should contact anyone else within USFWS.
>
> Thank you so much. Have a good rest of your week and a Happy Thanksgiving.
>
> Best,
> Emily

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

--
Lesli A. Gray
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972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

--

_____
Peter J. Fasbender
Assistant Regional Director - Ecological Services
U.S. Fish and Wildlife Service
500 Gold Avenue SW
Albuquerque, New Mexico 87102
(505) 248-6671

--

Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: (b) (6)
To: Bill Radke
Subject: Re: [EXTERNAL] Need to talk when we can
Date: Friday, November 1, 2019 9:12:01 PM

Awesome, that is great.
If there is an emergency on our end...I will let you know not to come by very early that morning.
Otherwise, see you then.
Thank you, (b) (6)

On Friday, November 1, 2019, 04:12:20 PM MST, Bill Radke <bill_radke@fws.gov> wrote:

(b) (6); I can be at your house at 10:30 AM on Monday. Thank you, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Nov 1, 2019, at 1:47 PM, (b) (6) <(b) (6)> wrote:

> Bill, we should get together Monday. If possible...Dad and I can meet you at the refuge, or you can come up here.
> Dad will be back in Monday morning by about 10:00 if you wanted to come about 10:30.
> Thank you, (b) (6)

From: rod dossey
To: Tasha Harden; (b) (6), (b) (7)(C)
Subject: Re: [EXTERNAL] Re: Black Draw field work
Date: Thursday, October 24, 2019 1:24:04 PM

It was great talking to you and I really appreciate your working with us on such short notice.

Thank you
Rod

Get Outlook for iOS

From: Tasha Harden <tasha_harden@fws.gov>
Sent: Thursday, October 24, 2019 11:13:47 AM
To: (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C)>
Cc: rod dossey <rod@bio-studies.com>
Subject: Re: [EXTERNAL] Re: Black Draw field work

Thanks guys, and thanks for the call Rod. I met with the first two members onsite, they will relay what we discussed to the other team members when they show up. Rod please keep me in the loop with what all they document at the Black Draw location.
Thanks!

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

On Oct 24, 2019, at 7:16 AM, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C)> wrote:

> Thank you Tasha.
>
> Rod - Can you please share Tasha's information with your field team?
>
> Thank you
>
> > On Oct 24, 2019, at 9:55 AM, Harden, Tasha <tasha_harden@fws.gov> wrote:
> >
> > Morning Paul and Rod,
> > I was asked to coordinate with you two on relocation areas for fish/frogs found in Black Draw. I will be out on refuge today with another group starting at 0900- I should be done with them after an

hour or so. Please feel free to call/text my cell phone listed below if you would like to meet up today at Black Draw on the border during the late morning.

As for relocation areas on refuge for frogs/fish- we ask that you just leave any fish/frogs found in Black Draw. Any frogs will likely be bull frogs (invasive species) and there is a potential for mosquito fish to be found in that area (another invasive and easily confused with our endangered topminnow). We do not want to risk introducing mosquito fish to refuge ponds as the ponds are all currently clean and free of that species.
Hopefully we can meet up today, and if you have any further questions just let me know,
Thanks-

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From:	Tara Harris
To:	Jeffrey Sorensen
Cc:	Bill Radke; Tim Snow; Harden, Tasha; Bradley Poynter; Karen Klima
Subject:	RE: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use
Date:	Tuesday, December 31, 2019 9:04:21 AM

Thanks very much for putting all of this together, Jeff. We look forward to the phone call.

Tara

Tara Harris, Ph.D.
Director of Conservation and Science

Arizona Center for Nature Conservation
Phoenix Zoo | South Mountain Environmental Education Center
455 N. Galvin Parkway | Phoenix, AZ 85008
p 602.286.3800 x7311 | d 602.914.4317
tharris@phoenixzoo.org | phoenixzoo.org | smeec.org

From: Jeffrey Sorensen <jsorensen@azgfd.gov>
Sent: Tuesday, December 31, 2019 8:00 AM
To: Harden, Tasha <tasha_harden@fws.gov>; Bradley Poynter <BPoynter@phoenixzoo.org>; Tara Harris <tharris@phoenixzoo.org>; Karen Klima <kklima@azgfd.gov>
Cc: Bill Radke <bill_radke@fws.gov>; Tim Snow <tsnow@azgfd.gov>
Subject: Re: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use

Hello all,
Attached is the call in numbers and an outline of topics to discuss for our upcoming conf call on the San Bernardino springsnail on January 9 at 1pm. I've also attached some relevant docs on past site visits and the 2005 manuscript on the species and its habitat. Thanks!
Jeff

On Mon, Dec 23, 2019 at 8:00 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:

> Hi Tasha, Brad, Tara, and Karen,
> Let's schedule our conference call on the San Bernardino springsnail discussion for Thursday, January 9, at 1pm. I'll send you guys the call in numbers (...I need to check with my admin staff to reserve one of our two conference lines for that day and time). Thanks!
> Jeff
>
> On Mon, Dec 16, 2019 at 12:58 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
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> > My schedule is pretty open so far for January.... 8-10 and 15-17 are open for me. It will more than likely just be me on the call so lets go ahead and set one up.
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> > On Thu, Dec 12, 2019 at 7:22 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
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refuge population of those springsnails. The Phoenix Zoo folks have the facility and the experience maintaining springsnails in captivity. We should talk more about this, perhaps after the holidays. Between the zoo folks and several of us at AZGFD, we know how to collect and transport the snails safely. I'd like to visit the Slaughter Ranch again with you guys to do a more recent survey of that last population to assess how abundant they are. Are there any dates in early January that you and Bill are available for a conf call? I'll set that up and invite the zoo folks and our Tucson regional bios to the call.
Jeff

On Thu, Dec 12, 2019 at 2:38 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Jeff,
> I just finished talking with Bill. We are not currently seeing any impacts to the snails but we would be happy to work with you and the zoo to get a sample established elsewhere for good measures, given the current activity out there. We do not have the expertise to do the collection, relocation and such... so we will need assistance with the process.
>
> On Thu, Dec 12, 2019 at 12:01 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
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> > Sounds good, thanks!
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> > > Hi Jeff- Sorry we haven't responded yet, it has been a little busier than usual for us. Bill is around today (but currently out on refuge) When he gets back I will ask him if he will have time to call you or if he just wants to relay info through me. One of us will be in touch!
> > >
> > > On Thu, Dec 12, 2019 at 8:01 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> > >
> > > > Hi Bill and Tasha,
> > > > I have not heard back from you from my last email. Can you tell me what the status of the San Bernardino springsnail is on the Slaughter Ranch? Are you guys concerned about the loss of additional groundwater due to wells being used to build the border fence? Do you have any plans to attempt to salvage any springsnails and hold them in a refugia or on the San B NWR? Please let me know and how we can help. Thanks!
> > > > Jeff
> > > >
> > > > On Thu, Nov 14, 2019 at 11:58 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> > > >
> > > > > Hi Bill,
> > > > > Sorry it's been a long while since I've caught up with you on monitoring and management for the San Bernardino springsnail. I just talked with Doug Duncan, and got a message from the Phoenix Zoo Conservation Center staff about

concerns on the springsnail and groundwater water use related to the border wall construction. I'd like to talk with you and Tasha about this and any recommendations that you have.

The Phoenix Zoo staff have indicated they have the capacity to hold any salvaged springsnails in a refugia set up, if that is an option. They've had many years of experience and success maintaining captive populations of Page springsnails, Three Forks springsnails, and more recently Huachuca springsnails. The later two species are what they are currently holding in separate containment systems, although the few Three Forks springsnails in their population can be moved into a smaller system.

Please give me a call or email. My work cell is the best way to reach me (480-243-5496). I'd like to find out how I can help in this situation. Take care!
Jeff

--
JEFF A. SORENSEN | INVERTEBRATE WILDLIFE PROGRAM MANAGER

ARIZONA GAME AND FISH DEPARTMENT

OFFICE: 623.236.7740
MOBILE: 480.243.5496

EMAIL: jsorensen@azgfd.gov

azgfd.gov | 5000 W. Carefree Highway, Phoenix, AZ 85086

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From: Radke, Bill
To: Alan Finks
Bcc: Tasha Dolgoff
Subject: Re: [EXTERNAL] Re: Slaughter Ranch Well Monitoring - Flow Meter Installation
Date: Monday, December 30, 2019 6:56:44 AM

Hi Alan; Thank you for your message. My December 16 email request seems to have created some misunderstandings, which I apologize for. I do not feel you have ever abused water on Slaughter Ranch, and in no way am I challenging your continued use of water as described in the warranty deed between Slaughter Ranch and the FWS. I in no way requested your permission to monitor Slaughter Ranch water use due to any perception on my part that your water use requires regulation or oversight, and I am sorry if I created that impression.

As you know, the Fish and Wildlife Service (FWS) finds itself in a contentious position with DHS use of groundwater in support of their border infrastructure construction projects. We have repeatedly requested that DHS contractors not draw water from within 5-miles of the refuge boundary because our hydrologic model depicts negative impacts to the artesian wells on the refuge. I have provided you the FWS hydrology reports to assist you in decision making regarding your own operations. So far, DHS contractors have failed to comply with our requests and are continuing to pump a considerable daily volume of water from the Glenn Ranch Well adjacent to Silver Creek, have additionally attempted to drill a new well less that 500 feet from the east boundary of the refuge (they eventually abandoned that well as it never hit productive water), and are working to develop another well adjacent to the northeast corner of the refuge.

Due to the waiver of all environmental laws related to this DHS project, the only action currently available to the FWS is to regularly monitor existing refuge wetlands, wells, and fish populations, obtain data from DHS regarding their own water withdrawal, and use all this information to continually develop and perfect the risk assessment to the refuge. Additionally, FWS hydrologists are gathering and analyzing pertinent information to help identify the minimum amount of water needed to keep at least some fish alive on the refuge. Neither DHS nor Glenn Ranch are providing FWS the opportunity to monitor water levels in the Glenn Ranch Well. Your new domestic well is likely the best location to monitor impacts to the regional aquifer from DHS contractor water withdrawal because it is the closest deep aquifer well in proximity to the Glenn Ranch Well being used by the DHS contractors. Monitoring should help track daily, weekly, and monthly water level fluctuations in relation to withdrawal from the nearby Glenn Ranch Well, and should also illustrate water recharge rates in relation to the DHS water withdrawal. Therefore, thank you for your continuous generous offer to allow FWS to install a depth gauge (transducer) in your new well. We will coordinate the installation with you, and will provide you the information we are able to gather from that well.

Whether it seems logical or not, DHS and their contractors will be expected to continue to challenge any information gathered by FWS regarding the actual and anticipated effects of groundwater withdrawal and its impacts to refuge wetlands. I do anticipate that part of the equation (and DHS defense) will continue to be "How much water is the refuge and Slaughter Ranch withdrawing from the aquifer? (In other words: "How do you know DHS contractors are the ones causing the decline in artesian flows on the refuge?"). I have already had that very question informally posed to me. In addition to collecting and providing only refuge water use, while stating that the Slaughter Ranch use is "minimal," I feel it would be better to measure the amounts of all water withdrawal and simply eliminate the conjecture by others

that will result from not using all the potentially available information in any FWS risk assessment development. I hope this better explains my earlier request to you, and helps eliminate any perceived FWS oversight toward Slaughter Ranch operations.

I appreciate and accept the response you have already provided me, and I look forward to working together with you in ways that address the ongoing threats we are both facing. Sincerely, Bill

On Thu, Dec 26, 2019 at 4:26 PM Alan Finks <(b) (6) > wrote:

> Dear Bill,
>
> We respectfully decline your generous offer.
>
> In forty years of managing the Slaughter Ranch, The Johnson Foundation has never abused our stewardship of the water on the Ranch nor have we overdrawn the pond or the artesian springs.
>
> I fail to see how a residential well (We have hooked the new well up to our existing residential water system) could possibly draw down the water table. Nor do I see how Border Patrol could possibly accuse us of such.
>
> As you know, our intake pipe in the pond only goes down two feet. Therefore, we are literally not able to draw the pond down more than that.
>
> If you want to install a depth gauge on the well, or on the pond, of course we would be delighted to oblige.
>
> Thanks,
>
> Alan Finks
> President
> Johnson Historical Museum of the Southwest.
>
> On Mon, Dec 16, 2019 at 7:23 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Hi Alan;
> >
> > Thank you for the update recently on your domestic well development at Slaughter Ranch, and your generous offer to let FWS monitor that well. Yes, FWS would very much like to monitor water withdrawal from that new well. We wish to do this primarily for the following reason: While FWS continues to challenge the use and amount of water withdrawal from the Glenn's Well near Silver Creek, and while we are monitoring that withdrawal in relation to the numerous effects we are seeing in relation to lowering pond levels on the refuge, I expect that eventually DHS/USACE/Border Contractors/Glenns will ask something like: "How much water is being pumped at Slaughter Ranch and how do you know that they are not the ones impacting refuge pond levels?" I therefore want to have an answer ready for that kind of question, and the monitoring being planned at your new domestic well will help provide that answer. Naturally, we will provide you any information that we gather at your well.
> >
> > The FWS would like to install a flow meter at your new well at our cost. We can either do

> that after the well is plumbed, or (even better if possible) the well contractor can provide and install a suitable flow meter and then submit an invoice to me so I can pay that part of the bill. Please tell me which method you prefer.
>
> Thank you for your help, Bill
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From:	Jeffrey Sorensen
To:	Harden, Tasha; Bradley Poynter; tharris@phoenixzoo.org; Karen Klima
Cc:	Bill Radke; Tim Snow
Subject:	Re: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use
Date:	Tuesday, December 31, 2019 8:05:06 AM
Attachments:	San Bernardino Springsnail partners conf call agenda 1-9-2020.docx INVITED PARTICIPANT Conference Call Instructions for Meeting 17510.docx Trip Report San Bernardino Springsnail.doc Malcom et al 2005 San Bernardino springsnail habitat use.pdf J Sorensens fieldnotes SBNWR-Slaughter Ranch visit.20100519.pdf

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> > >
> > > Please give me a call or email. My work cell is the best way to reach me (480-243-5496). I'd like to find out how I can help in this situation. Take care!
> > > Jeff
> > >
> > > --
> > > **JEFF A. SORENSEN** | INVERTEBRATE WILDLIFE PROGRAM MANAGER
> > > ARIZONA GAME AND FISH DEPARTMENT
> > >
> > > OFFICE: 623.236.7740
> > > MOBILE: 480.243.5496
> > > EMAIL: jsorensen@azgfd.gov
> > >
> > > azgfd.gov | 5000 W. Carefree Highway, Phoenix, AZ 85086
> > >
> > > Join our new Conservation Membership program and ensure a wildlife legacy for the future.

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Assistant Manager

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From: Radke, Bill
To: (b) (6)
Subject: Re: [EXTERNAL] Reading through what you sent
Date: Tuesday, October 22, 2019 5:02:38 AM

Hi (b) (6); I am at my Douglas (Hwy 191) office today. I don't know what you have going on today, but I am available to meet and talk with you and/or (b) (6) about the border issues. If a face to face meeting is difficult, maybe we can at least speak over the phone. If today is simply impossible for you, I understand. Just let me know, and I can come out to talk. Thank you, Bill Radke

On Mon, Oct 21, 2019 at 7:42 PM (b) (6) <(b) (6)> wrote:

> Got it! Thank you!
> We only have 7 wells...I am not sure where they got 9...but it is no matter...
> Also, the contractor is only using 150 gallons a minute and have not ramped up to 300...which is good. Will not doubt change when they start mixing cement.
>
> Will talk soon.
> K

On Monday, October 21, 2019, 06:58:20 AM MST, Radke, Bill <bill_radke@fws.gov> wrote:

(b) (6); Please don't jump to any conclusions about the intent of the memo and attachments that I sent to you. These were prepared by FWS as a risk assessment to provide to DHS in the hope of formally identifying our concerns to them and obviously involve Glenn Ranch as the landowner. I wanted to get these to you as soon as I had them, and I obviously still need (and much desire) to talk to you about them. Please do not stress, Bill

On Wed, Oct 16, 2019 at 3:12 PM (b) (6) <(b) (6)> wrote:

> Bill,
> I am going to have our lawyer read through the documents you sent me...We are trying to get a load of cattle out and in briefly reading through one of the documents it sounds accusing and maybe holding us liable...I am surprised it has come to a personal investigation as to our ranch wells and our ranch business...maybe I am wrong, but I am not sure how all of a sudden without a discussion from anyone we are discussed for letting the contractors use water. This is mimicking Dion Ethell recommending the wall in the first place without any conversation as to how the wall will impact the valley, our ranch and our resources.
> I have been very clear in all of my arguments against the wall and now to read the one document, there is a lot of our business in it regarding our ranch wells and personally I am not appreciating it. BUT...maybe I am reading it all wrong in my haste...so I printed it and I will read it again tonight.
>
> Who is authorized to publish a report like this without even having a discussion with us??
> K
>
> Going to help Warner with the cattle...

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509

Douglas, AZ 85608
Cell: (520) 508-7180

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Baca, Joaquin
To: Radke, Bill
Cc: Steve Reagan; Juliette Fernandez; McIntyre, Julie; Scott Richardson; Tasha Dolgoff
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 7:47:02 AM
Attachments: Attachment2_SBNWR_Legal_151019.pdf **Withhold B5**

Bill,

My apologies. I attached the wrong legal analysis document. Please use the below legal analysis. This version has several edits from Kim Bannerman and Justin Tade from the Solicitors office. In particular, please look though "section 4, analysis."

On Tue, Oct 15, 2019 at 7:24 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Morning Bill,
>
> Please see the attached final versions. Please let me know if you have any questions.
>
> Thank you
>
> On Fri, Oct 11, 2019 at 11:05 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Hi Steve;
> >
> > The DHS border infrastructure construction is ongoing and hitting San Bernardino NWR in a major negative way. Although FWS has informed DHS on multiple occasions that their planned (now ongoing) withdrawal of groundwater will impact refuge wells and wetlands, they are awaiting our "Hydrology Report" before they potentially alter any of their plans. I explained to Joaquin Baca (FWS DWR) that we needed the "hydrology" report as soon as possible, but no later than the end of September to meet DHS requests for our data. Because we have not yet produced that report, DHS has been pumping from a well located 1.6 miles west of the refuge for the past one and a half months (total volume pumped is about 2 million gallons so far). DHS contractors also just drilled a new well about 4 miles west of the refuge last week. I learned yesterday that DHS contractors are planning on drilling a third well just east of the refuge within the next week or two. All of these wells are being drilled into the deep aquifer that supports artesian flow on the refuge. It is crucial that the "hydrology" report is completed in a final form and provided to DHS or we will continue to lose the water that supports the refuge.
> >
> > Another ramification of the DHS infrastructure project is that the owners of Slaughter Ranch (FWS has a conservation easement on their property, located immediately adjacent to the refuge) are concerned that the DHS water withdrawal will dry up their domestic water source (they are correct in that assumption). Please see their attached email requesting to drill a new well on their "easement-protected" property, which will solve their domestic use problem and further deplete and complicate any species recovery efforts on the refuge. The threat of groundwater depletion at San Bernardino NWR has gone from "concerning" to "dire emergency." Anything you can do at your end to urge our Division of Water Resources to complete the report and move it through the DOI Solicitor's Office would be greatly appreciated.
> >
> > Thank you for your help, Bill Radke

---------- Forwarded message ---------
From: **Alan Finks** <(b) (6) >
Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

Bill,
I am mailing the following letter to your office today. Please respond as quickly as possible, because I don't know how much time we have. Thanks, Alan
****

Mr. William Radke
US Fish & Wildlife Service
Refuge Manager
San Bernardino National Wildlife Refuge
P.O. Box 3509 7628 North Hwy. 191
Douglas, Arizona 85608

Dear Bill,

Thank you again for your email of September 18 regarding new border infrastructure impacts on the Slaughter Ranch.

The board members of the Johnson Foundation are concerned that the pumping of water you describe from the aquifers in the San Bernardino Valley will adversely affect the artesian springs under the Slaughter Ranch Museum.

We anticipate a time in the near future that these springs will fail as a direct result of the pumping of millions of gallons of water from the aquifer. Should these springs fail, even temporarily, the Slaughter Ranch will immediately be unable to provide water for our staff, our visitors, and our animals. This is an untenable situation.

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Therefore, we, the Johnson Foundation and the Slaughter Ranch Museum formally request the permission and the blessing of the US Fish and Wildlife department, and the San Bernardino National Wildlife Refuge in particular to dig a well for our personal use on our property up on the hill to the West of the Main Ranch House.

A professional will be hired to determine the ideal spot.

Yours Truly,

> Alan Finks
> President, Johnson Foundation
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
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From: Baca, Joaquin
To: Radke, Bill
Cc: Steve Reagan; Juliette Fernandez; McIntyre, Julie; Scott Richardson; Tasha Dolgoff
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 7:24:23 AM
Attachments: Cover_Letter_SBNWR2019.pdf
[redacted]ttachment2_SBNWR_Legal_151019.pdf **Withhold B5**
Attachment1_151019_SBNWR_Drawdown.pdf

Morning Bill,

Please see the attached final versions. Please let me know if you have any questions.

Thank you

On Fri, Oct 11, 2019 at 11:05 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Steve;
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> Thank you for your help, Bill Radke
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> ---------- Forwarded message ---------
> From: **Alan Finks** <(b) (6) [redacted]>
> Date: Fri, Oct 11, 2019 at 8:52 AM
> Subject: [EXTERNAL] San Bernadino Ranch Water Options
> To: Radke, Bill <bill_radke@fws.gov>

Bill,
I am mailing the following letter to your office today. Please respond as quickly as possible, because I don't know how much time we have. Thanks, Alan
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Mr. William Radke
US Fish & Wildlife Service
Refuge Manager
San Bernardino National Wildlife Refuge
P.O. Box 3509 7628 North Hwy. 191
Douglas, Arizona 85608

Dear Bill,

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Therefore, we, the Johnson Foundation and the Slaughter Ranch Museum formally request the permission and the blessing of the US Fish and Wildlife department, and the San Bernardino National Wildlife Refuge in particular to dig a well for our personal use on our property up on the hill to the West of the Main Ranch House.

A professional will be hired to determine the ideal spot.

Yours Truly,

Alan Finks
President, Johnson Foundation

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Baca, Joaquin
To: Radke, Bill
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 8:43:41 AM
Attachments: Attachment2_SBNWR_Legal_151019.pdf **Withhold B5**

Our edits

On Tue, Oct 15, 2019 at 7:57 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Joaquin; Thank you, I am going through it now. Will call you soon. Bill
>
> On Tue, Oct 15, 2019 at 6:24 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
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Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

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Refuge Manager
San Bernardino National Wildlife Refuge
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From: Radke, Bill
To: Alan Finks
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 22, 2019 2:54:19 PM
Attachments: Allan Finks Letter October 2019.pdf
FWS Letter to Allan Finks October 2019.pdf

Hi Alan; Attached is the U.S. Fish and Wildlife Service letter in response to your request to develop a domestic well for water at Slaughter Ranch, adjacent to San Bernardino NWR in Cochise County, Arizona. Thank you for reaching out to us with your request. The original letter is being sent to you via Federal Express letter and you should receive it on Wednesday (tomorrow). Please stay in contact with me, and let me know when you begin to see a drop in artesian flow at your Horse Trough at Slaughter Ranch, as that would be one signal indicating groundwater withdrawal. Sincerely, Bill Radke

On Fri, Oct 11, 2019 at 8:52 AM Alan Finks <(b) (6) > wrote:

> Bill,
> I am mailing the following letter to your office today. Please respond as quickly as possible, because I don't know how much time we have. Thanks, Alan
> **********
>
> Mr. William Radke
> US Fish & Wildlife Service
> Refuge Manager
> San Bernardino National Wildlife Refuge
> P.O. Box 3509 7628 North Hwy. 191
> Douglas, Arizona 85608
>
> Dear Bill,
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> Thank you again for your email of September 18 regarding new border infrastructure impacts on the Slaughter Ranch.
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> The board members of the Johnson Foundation are concerned that the pumping of water you describe from the aquifers in the San Bernardino Valley will adversely affect the artesian springs under the Slaughter Ranch Museum.
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> A professional will be hired to determine the ideal spot.
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> Yours Truly,
>
> Alan Finks
> President, Johnson Foundation

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Fernandez, Juliette
To: Bill Radke
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 8:19:34 AM

Let me know if you need ANYTHING else on this and I'll push it.

Thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Tue, Oct 15, 2019 at 7:47 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Bill,
>
> My apologies. I attached the wrong legal analysis document. Please use the below legal analysis. This version has several edits from Kim Bannerman and Justin Tade from the Solicitors office. In particular, please look though "section 4, analysis."
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Thank you for your help, Bill Radke

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From: **Alan Finks** <(b) (6) >
Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

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Refuge Manager
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Yours Truly,

Alan Finks
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--
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From: Burck, Peter
To: Reagan, Steve
Cc: Baca, Joaquin; Harris, Grant; Darrell Kundargi
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 7:19:57 AM

Hi Everyone,

Yes, let's meet at 9 a.m. this morning in the Situation Room. Thank you.

Peter

On Tue, Oct 15, 2019 at 7:04 AM Reagan, Steve <steve_reagan@fws.gov> wrote:

> You all meeting at 9 AM, is that correct?
>
> Steve
>
> Steve Reagan
> Deputy Regional Chief - National Wildlife Refuge System
> 500 Gold Ave SW Room 4236
> PO Box 1306
> Albuquerque, NM 87103
> (505)248-6645 (office)
> (505)238-4355 (cell)
>
> On Tue, Oct 15, 2019 at 6:57 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> > Steve,
> > I believe so. I have that report ready minus a couple of small edits that Bill had sent last week.
> >
> > On Tue, Oct 15, 2019 at 6:50 AM Reagan, Steve <steve_reagan@fws.gov> wrote:
> >
> > > Joaquin,
> > >
> > > Are you all having a Division of Water Resources gathering today? We need to discuss Bill's need for the final report.
> > >
> > > Steve
> > >
> > > Steve Reagan
> > > Deputy Regional Chief - National Wildlife Refuge System
> > > 500 Gold Ave SW Room 4236
> > > PO Box 1306
> > > Albuquerque, NM 87103
> > > (505)248-6645 (office)
> > > (505)238-4355 (cell)

---------- Forwarded message ---------
From: **Radke, Bill** <bill_radke@fws.gov>
Date: Fri, Oct 11, 2019 at 11:05 AM
Subject: Fwd: [EXTERNAL] San Bernadino Ranch Water Options
To: Steve Reagan <steve_reagan@fws.gov>
Cc: Juliette Fernandez <juliette_fernandez@fws.gov>, Joaquin Baca <joaquin_baca@fws.gov>, McIntyre, Julie <julie_mcintyre@fws.gov>, Scott Richardson <scott_richardson@fws.gov>, Tasha Dolgoff <tasha_harden@fws.gov>

Hi Steve;

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Another ramification of the DHS infrastructure project is that the owners of Slaughter Ranch (FWS has a conservation easement on their property, located immediately adjacent to the refuge) are concerned that the DHS water withdrawal will dry up their domestic water source (they are correct in that assumption). Please see their attached email requesting to drill a new well on their "easement-protected" property, which will solve their domestic use problem and further deplete and complicate any species recovery efforts on the refuge. The threat of groundwater depletion at San Bernardino NWR has gone from "concerning" to "dire emergency." Anything you can do at your end to urge our Division of Water Resources to complete the report and move it through the DOI Solicitor's Office would be greatly appreciated.

Thank you for your help, Bill Radke

---------- Forwarded message ---------
From: **Alan Finks** <(b) (6) >
Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

Bill,
I am mailing the following letter to your office today. Please respond as quickly as

possible, because I don't know how much time we have. Thanks, Alan
****

Mr. William Radke
US Fish & Wildlife Service
Refuge Manager
San Bernardino National Wildlife Refuge
P.O. Box 3509 7628 North Hwy. 191
Douglas, Arizona 85608

Dear Bill,

Thank you again for your email of September 18 regarding new border infrastructure impacts on the Slaughter Ranch.

The board members of the Johnson Foundation are concerned that the pumping of water you describe from the aquifers in the San Bernardino Valley will adversely affect the artesian springs under the Slaughter Ranch Museum.

We anticipate a time in the near future that these springs will fail as a direct result of the pumping of millions of gallons of water from the aquifer. Should these springs fail, even temporarily, the Slaughter Ranch will immediately be unable to provide water for our staff, our visitors, and our animals. This is an untenable situation.

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With a well less than a mile away from the house pond about to pump tens or hundreds of thousands of gallons of water daily from the ground, this concern seems irrelevant. The few hundreds of gallons per day that we might need for our uses pale in comparison.

Therefore, we, the Johnson Foundation and the Slaughter Ranch Museum formally request the permission and the blessing of the US Fish and Wildlife department, and the San Bernardino National Wildlife Refuge in particular to dig a well for our personal use on our property up on the hill to the West of the Main Ranch House.

A professional will be hired to determine the ideal spot.

Yours Truly,

Alan Finks
President, Johnson Foundation

--
William R. Radke; Project Leader

U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

--
Peter Burck
Hydrologist
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Physical Address:
500 Gold Avenue SW
Albuquerque, NM 87102
Mailing Address:
PO Box 1306
Albuquerque, NM 87103-1306
(505) 248-7961 (Office)

From: Reagan, Steve
To: Radke, Bill
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 6:51:52 AM

Bill,

I am going to get with Joaquin ASAP and see where this stands and how soon we can get this completed.

Steve

Steve Reagan
Deputy Regional Chief - National Wildlife Refuge System
500 Gold Ave SW Room 4236
PO Box 1306
Albuquerque, NM 87103
(505)248-6645 (office)
(505)238-4355 (cell)

On Fri, Oct 11, 2019 at 11:05 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Steve;
>
> The DHS border infrastructure construction is ongoing and hitting San Bernardino NWR in a major negative way. Although FWS has informed DHS on multiple occasions that their planned (now ongoing) withdrawal of groundwater will impact refuge wells and wetlands, they are awaiting our "Hydrology Report" before they potentially alter any of their plans. I explained to Joaquin Baca (FWS DWR) that we needed the "hydrology" report as soon as possible, but no later than the end of September to meet DHS requests for our data. Because we have not yet produced that report, DHS has been pumping from a well located 1.6 miles west of the refuge for the past one and a half months (total volume pumped is about 2 million gallons so far). DHS contractors also just drilled a new well about 4 miles west of the refuge last week. I learned yesterday that DHS contractors are planning on drilling a third well just east of the refuge within the next week or two. All of these wells are being drilled into the deep aquifer that supports artesian flow on the refuge. It is crucial that the "hydrology" report is completed in a final form and provided to DHS or we will continue to lose the water that supports the refuge.
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> Another ramification of the DHS infrastructure project is that the owners of Slaughter Ranch (FWS has a conservation easement on their property, located immediately adjacent to the refuge) are concerned that the DHS water withdrawal will dry up their domestic water source (they are correct in that assumption). Please see their attached email requesting to drill a new well on their "easement-protected" property, which will solve their domestic use problem and further deplete and complicate any species recovery efforts on the refuge. The threat of groundwater depletion at San Bernardino NWR has gone from "concerning" to "dire emergency." Anything you can do at your end to urge our Division of Water Resources to complete the report and move it through the DOI Solicitor's Office would be greatly appreciated.

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From: **Alan Finks** <(b) (6) >
Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

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Yours Truly,

Alan Finks
President, Johnson Foundation

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Baca, Joaquin
To: Radke, Bill
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 15, 2019 8:43:41 AM
Attachments: Attachment2_SBNWR_Legal_151019.pdf **Withhold B5**

Our edits

On Tue, Oct 15, 2019 at 7:57 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Joaquin; Thank you, I am going through it now. Will call you soon. Bill
>
> On Tue, Oct 15, 2019 at 6:24 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> > Morning Bill,
> >
> > Please see the attached final versions. Please let me know if you have any questions.
> >
> > Thank you
> >
> > On Fri, Oct 11, 2019 at 11:05 AM Radke, Bill <bill_radke@fws.gov> wrote:
> >
> > > Hi Steve;
> > >
> > > The DHS border infrastructure construction is ongoing and hitting San Bernardino NWR in a major negative way. Although FWS has informed DHS on multiple occasions that their planned (now ongoing) withdrawal of groundwater will impact refuge wells and wetlands, they are awaiting our "Hydrology Report" before they potentially alter any of their plans. I explained to Joaquin Baca (FWS DWR) that we needed the "hydrology" report as soon as possible, but no later than the end of September to meet DHS requests for our data. Because we have not yet produced that report, DHS has been pumping from a well located 1.6 miles west of the refuge for the past one and a half months (total volume pumped is about 2 million gallons so far). DHS contractors also just drilled a new well about 4 miles west of the refuge last week. I learned yesterday that DHS contractors are planning on drilling a third well just east of the refuge within the next week or two. All of these wells are being drilled into the deep aquifer that supports artesian flow on the refuge. It is crucial that the "hydrology" report is completed in a final form and provided to DHS or we will continue to lose the water that supports the refuge.
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> > >
> > > Thank you for your help, Bill Radke
> > >
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From: **Alan Finks** <(b) (6) [redacted]>
Date: Fri, Oct 11, 2019 at 8:52 AM
Subject: [EXTERNAL] San Bernadino Ranch Water Options
To: Radke, Bill <bill_radke@fws.gov>

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Yours Truly,

> > Alan Finks
> > President, Johnson Foundation
> >
> > --
> > William R. Radke; Project Leader
> > U.S. Fish and Wildlife Service
> > Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> > P.O. Box 3509
> > Douglas, AZ 85608
> > Cell: (520) 508-7180
>
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549
> www.facebook.com/USFWS Water Resources

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From: Alan Finks
To: Radke, Bill
Subject: Re: [EXTERNAL] San Bernadino Ranch Water Options
Date: Tuesday, October 22, 2019 5:13:22 PM

Thank you, Sir.

Alan Finks

On Tue, Oct 22, 2019 at 1:54 PM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Alan; Attached is the U.S. Fish and Wildlife Service letter in response to your request to develop a domestic well for water at Slaughter Ranch, adjacent to San Bernardino NWR in Cochise County, Arizona. Thank you for reaching out to us with your request. The original letter is being sent to you via Federal Express letter and you should receive it on Wednesday (tomorrow). Please stay in contact with me, and let me know when you begin to see a drop in artesian flow at your Horse Trough at Slaughter Ranch, as that would be one signal indicating groundwater withdrawal. Sincerely, Bill Radke
>
> On Fri, Oct 11, 2019 at 8:52 AM Alan Finks <(b) (6) > wrote:
>
> > Bill,
> > I am mailing the following letter to your office today. Please respond as quickly as possible, because I don't know how much time we have. Thanks, Alan
> > **********
> >
> > Mr. William Radke
> > US Fish & Wildlife Service
> > Refuge Manager
> > San Bernardino National Wildlife Refuge
> > P.O. Box 3509 7628 North Hwy. 191
> > Douglas, Arizona 85608
> >
> > Dear Bill,
> >
> > Thank you again for your email of September 18 regarding new border infrastructure impacts on the Slaughter Ranch.
> >
> > The board members of the Johnson Foundation are concerned that the pumping of water you describe from the aquifers in the San Bernardino Valley will adversely affect the artesian springs under the Slaughter Ranch Museum.
> >
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President, Johnson Foundation

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William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: MacMillan, Ariel
To: Harden, Tasha
Subject: Re: [EXTERNAL] San Bernardino Wells
Date: Monday, December 23, 2019 10:32:42 AM

Tasha,

Thank you so much! This is a great start to the information I am looking for. Let me know if you find any others. I will be sure to share my final product with you when it comes to fruition.

Have a happy holiday!
Ariel

Ariel MacMillan-Sanchez
Legal Intern
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Telephone: (505) 248-6834

On Fri, Dec 20, 2019 at 5:31 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> The email I referred to :)
>
> ---------- Forwarded message ---------
> From: **Walker, Cassondra** <cassondra_walker@fws.gov>
> Date: Mon, Nov 25, 2019 at 7:06 AM
> Subject: Fwd: [EXTERNAL] San Bernardino Wells
> To: Radke, Bill <bill_radke@fws.gov>, Harden, Tasha <tasha_harden@fws.gov>, Monty Mcdaniel <monty_mcdaniel@fws.gov>
>
> Here are the 55- state numbers for our monitoring wells. We still have two 55-wells that have not been identified, one is Frog and the other is still a mystery. Once I take a depth measurement for Frog we should be able to narrow those two down. Anyway, I was hoping that the more of us who have these numbers, the less likely we will be to have to re-solve this mystery.
>
> Cass
>
> ---------- Forwarded message ---------
> From: **Aaron Stolley** <adstolley@azwater.gov>
> Date: Fri, Nov 22, 2019 at 4:40 PM
> Subject: Re: [EXTERNAL] San Bernardino Wells
> To: Walker, Cassondra <cassondra_walker@fws.gov>
>
> I think I have them all figured out. I was actually able to sit down at my computer today and look at the Wells Registry map and go through the imaged

records for the wells. Comparing all of the info you sent me to the imaged records, here is my tentative list:

Hay Hollow Ponds 55-212321 (PZ-1)
Hay Hollow Upstream 55-212326 (PZ-2)
Hay hollow Downstream 55-212327 (PZ-3)
Black Draw North 55-546493
Black Draw South 55-546490
Black Draw East 55-546492
Cemetery North 55-552202 (SB-4)
Cemetery South 55-552203 (SB-3)

The Cemetery wells are throwing me off because the Notice of Intention (NOI) to drill says that 55-552202 was intended to be drilled to 15' and was drilled to 145'. The NOI for 55-552203 says it was intended to be drilled to 145' and was drilled to 35'. This could be a coincidence or it could be an error at the time those were drilled OR they could have changed their minds and switched the depths when they started drilling. We will likely never know.

There are two registration numbers left for monitor wells:

55-552204 (SB-2) 35' deep
55-552201 (SB-2) 45' deep

I'm positive that these belong to the Frog Well and the well that we couldn't locate by the cottonwoods.

The total depths are somewhat difficult in this case. The actual depth vs the depth recorded on the drillers report may be off. They could've rounded the number when they drilled, or the well could've filled in with sediment since the well has been drilled. We are at the mercy of the driller often and that can be incredibly frustrating. I'm sure someone from my section will be out again at some point and we can check the depths with our sounder. With the thin wire and weighted probe, it's easy to tell when you hit the bottom.

I've entered all of the wells in our database and will probably go back and add the registration numbers since I feel fairly confident. It sounds like my supervisor, Teri, will be in contact with Bill in the near future as to how to proceed with sharing data. Thanks again for your help!

On Fri, Nov 22, 2019 at 3:17 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Well, I did a little more digging and Bill told me the order that the Hay Hollow wells were drilled and since the paperwork is labeled PZ1, PZ2, and PZ3...I'm guessing on these but Hay Hollow Ponds (PZ-1/ 55212321), Hay Hollow Upstream (PZ-2/ 55-212326), and Hay Hollow Downstream (PZ-3/ 55-212327).

As for well depths, I did put the tape down the wells and tried to guess the depths (not a very accurate method to be sure). This is what I got:
Hay Hollow Ponds: 45.2
Hay Hollow Upstream: 33.6
Hay Hollow Downstream: 48.3
Black Draw North: 145.5
Black Draw South: 81.0
Black Draw East: 39.9
Cemetery North:131.5
Cemetery South: 48.5
Frog: I can't find this info, I'll remeasure next week and send it to you..

On Fri, Nov 22, 2019 at 12:30 PM Aaron Stolley <adstolley@azwater.gov> wrote:

> Don't worry about it!
>
> Do you know any of the total depths for the wells? If so, that could help us narrow them down.
>
> On Tue, Nov 12, 2019 at 12:04 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> > So, our records aren't very helpful...Here's what I think is right:
> >
> > Snail Spring Well on Slaughter Ranch-55-221027 (2011)
> >
> > The three Hay Hollow Wells- I don't know which is which - 55-212321; 55-212326; 55-212327 (2006)
> >
> > Leslie Canyon- South 55-203422; North 55-203420; Road 55-203419
> >
> > The only one I'm really sure about is Snail Spring...the others are speculation based on some of the paperwork
> >
> > I have paperwork and well number for other wells, but I don't know exactly where they are and if they even still exist....sorry, this was the best I could do.
> >
> > On Tue, Nov 12, 2019 at 7:46 AM Aaron Stolley <adstolley@azwater.gov> wrote:
> >
> > > I'll be in the field all week, so I won't be able to enter anything until next week. There's no rush, I just wanted to ask before I forgot.
> > >
> > > On Tue, Nov 12, 2019 at 7:11 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:
> > >
> > > > That is on my list of things to do today....I'll see what I can dig up for you.
> > > >
> > > > On Tue, Nov 12, 2019 at 6:34 AM Aaron Stolley <adstolley@azwater.gov> wrote:
> > > >
> > > > > Hi Cassondra,
> > > > >
> > > > > Can you send me the well names with their corresponding registration numbers? I want to match the wells to the list I have from my supervisor. After I get them

matched, I will enter them into our database and then we can talk about sharing data. Thanks again for taking me to all of the wells and good luck finding that well lost in the cottonwoods!

Aaron
--

Aaron Stolley

Basic Data Unit Team Lead

Arizona Department of Water Resources

Office: (602) 771-8734

Cell: (602) 525-0442

--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

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Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From: Valentine, Julie
To: Brent Range
Cc: Radke, Bill
Subject: Re: [EXTERNAL] San Pedro Well Locations Follow-up
Date: Friday, October 11, 2019 12:07:41 PM

I'm working with the field office not to straighten the communications out. Brent, do you know what Virginia did about the well locations?

Julie Valentine

Southwest Border Coordinator ♦ Special Assistant to FSA

Bureau of Land Management

Interior Region 8 – Lower Colorado Basin

O: 602-417-9230

C: 602-501-5277

On Fri, Oct 11, 2019 at 11:01 AM Brent Range <brent_range@ios.doi.gov> wrote:

> Thanks Bill. Julie is your best contact on any BLM inquires. She will forward to the appropriate person.
>
> Julie, thoughts?
>
>
> Brent K. Range
>
> Acting Deputy Assistant Secretary
>
> Public Safety, Resource Protection, Emergency Services
>
> U.S. Department of the Interior
>
> 1849 C Street NW - Room 5128
>
> Washington D.C.
>
> 20240
>
> Cell: 202-897-7206
>
> Office: 202-208-7431
>

Privileged and Confidential

On Oct 11, 2019, at 1:21 PM, Radke, Bill <bill_radke@fws.gov> wrote:

> Brent; This is something that I saw upon my return to work on October 9, and I have no way of responding accurately. BLM needs this one. Previously, when I forwarded these kinds of requests to the Tucson Field Office Manager, I was chastened for not sending it to the correct individual. Thanks for your help, Bill Radke
>
> ---------- Forwarded message ---------
> From: (b) (6), (b) (7)(C)
> <(b) (6), (b) (7)(C) >
> Date: Mon, Sep 30, 2019 at 10:07 AM
> Subject: [EXTERNAL] San Pedro Well Locations Follow-up
> To: bill_radke@fws.gov <bill_radke@fws.gov>
> Cc: (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >,
> brent_range@ios.doi.gov <brent_range@ios.doi.gov>, Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil>,
> MICHELLE.L.BARNES@usace.army.mil
> <MICHELLE.L.BARNES@usace.army.mil>
>
> Hello Bill,
>
> I'm reaching out to you on behalf of (b) (6), (b) (7)(C). Do you have some time tomorrow to discuss the well locations for San Pedro?
>
> Please let me know what time works best and I will send a meeting invitation.
>
> Thank you,
>
> (b) (6), (b) (7)(C)
>
> (b) (6), (b) (7)(C)
>
> U.S. Border Patrol
>
> Program Management Office Directorate
>
> Real Estate & Environmental

Communications & Outreach

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: (b) (6)
To: Radke, Bill
Subject: Re: [EXTERNAL] The documents you sent
Date: Wednesday, October 30, 2019 8:00:58 AM

Bill, I am leaving the house for the J Bar A and will be back for this interview.
I want you to know how my mind is spinning...just when I think I might have a day without someone "blaming" us for this...the *&^% hits the fan again.
It is exhausting...
I completely understand your stand and your fight for the cause!
But, each time our family is confronted on this, I too have to take a stand and try to keep it fair.
I really appreciate your support and your love of this land and it's critters.
I really appreciate the relationship we have had for years...You are a true patriot.
There are no "buts" here...we consider you a "champion for your cause"!

A journalist has been trying hard to interview me because of a conversation he had with TNC in Tucson, referencing your document.
The stuff in there about our family has spiked some good and bad conversations and I wanted to make sure the Malpai saw the document.
Somehow it got to the County Assessor. We had just gotten through a week of challenging the County Assessor's office...they took it upon themselves to drive out here and assume that Glenn Ranch Corporation was going into an industrial enterprise...they jacked our private property values up from $7.50/acre to $5000.00. We got that remedied and now...

Evidently, now there is a "water war" down here and we are in the middle of it...based on several journalists calling...they love conflict...I told the journalist that we had not been notified that we were going to be so heavily included in what was written, but it was someone thinking they were doing the right thing and not considering the consequences and accusations that would target our family. We have stood up for the refuge in all of this and we always have. Our reasoning for letting the contractors use the well is that it was originally drilled for Border Security, it became ours because that was the only compensation we got 2007-2009 for the heavy use of our land. I am going to meet him this afternoon at 1:30 at the Silver Creek bridge.

This is some of what I will say...
We are and always have been in support of strategic border security.
This is not as much of a absolute need for enhanced border security in this region as it is, from the top, a campaign promise and from the local level a personal achievement, a personal agenda so someone could make a name for themselves.
There are places on the US/Mexico Boundary that are begging for a structure, begging for some attention, begging for anything better than a Barbed Wire fence.

There are a lot of considerations and factors in all of this...it is not a cut and dried scenario...it has a lot of moving pieces.
There are people caught in the middle and there are people from the outside looking in that are calling the shots and not considerate of the repercussions on the people living and working at ground zero.
The environment is our concern and always has been. The sustainability of the landscape, the enhancement of the landscape...grassland restoration, watershed management.

Our family is the only human element in this valley that is actually at ground zero everyday...when we go "home"...we are still here. Everyone else that is accusing and including us in their conversations "goes home at the end of the day" and they go back to their private lives and concerns that are not directly related to the current project. Some of them have never even been here...they just have an opinion and they go with that.

Our family has been protective of and proactive with the Refuge since it's beginning. We chose to have

the contractors set up here because they set up here in 2007-2009. We chose to allow them to use this particular well because it was drilled for Border Security and we were allowed to continue to use the well for ranching purposes...which are low impact in this particular region compared to any other use...
The fact that our existence and our ranch operation were included in the document without our knowledge until it became public was a depressing surprise.
It is what it is. Now we are dealing with repercussions from that.

We are standing solid in our concerns: The first one being ***why*** is the wall being built in this region where the existing barriers were working, the towers were working, the BP agents were working...it is political...it is a personal agenda of someone's. It is a shame. This kind of thing divides communities, families and partnerships if you let it. We are not going to let it divide us from our deep rooted stewardship of this particular region.
The folks in charge of this very wall being built will retire and walk away...out of sight-out of mind.

We will be here for generations.
Now that it is being built, we are a driving force in them getting the design right in the lower portion of this valley where there are three major canyons that flow out of this valley into Mexico. The wrong design could result in heavy devastation of private, ranch, State and Federal infrastructure and the landscape. We are in support of the refuge and their defense of water use and they are immensely concerned and they should be.

We are keeping an open, amicable relationship with the contractors...it does not make sense to protest the people here on the ground building the wall. They are making a heavy impact and it is something they have agreed to repair when they are done here. We communicate everyday.
The water they are using for this segment in this valley is drastically lower than the predictions that came in before the project started. This particular well is not drawing down ***yet***.

The USFWS San Bernardino National Wildlife Refuge's concerns that it will draw down and deeply affect the refuge water sources...and it well may...are grounded and critical, no doubt.
Unfortunately, another factor completely unrelated to the wall is the prolonged drought we have been in in this region.
Hopefully, since this project is temporary in the big picture, the water aquifer in this region will replenish sooner than later and the refuge will survive and flourish before the many critters there are left with a minimal chance of survival.

Included in some of the design options are permanent/nightly lighting...here are some thoughts...why light it up...so the traffickers can see when no BP is present?
So they can see where the wall ends?
Lights will be a detriment to the wildlife, the whole living ecosystem in proximity to the wall and the lights...lights are just another slap in the face.
How are they going to be powered up consistently and inexpensively?

In summary...We will not be able to utilize the lower 1/3 of our ranch for the next fifteen months, besides the financial impact that will be inflicted on us, besides the futility of this particular wall and the recommendations that drove it's very existence, now we are having to deal with accusations of excessive water use. There will always be something. There will always be conflict..."Who gets a fair shake?" "Who gets thrown under the bus?" The environment, the wildlife, the rancher, the private landowner, the caretakers of the land...
It is an ever changing...everyday kind of thing...and all in the "name of Border Security"...in the "name" of something that our government, our leaders can not figure out...in the name of something that won't be fixed here at ground zero until it is fixed in Washington, until our laws are enforced, our leadership takes a stand and does the right thing for this country. There are many bigger issues facing this country ...two of which are the growing deficit and the way that this country has let the system fail, has let the illegals that infiltrated stay and reap benefits that our own citizens are not allowed to reap.

Summary...we did not want this wall. Some of our neighbors do. If they feel safer with the wall, and they are going to be satisfied that we are getting it...then we need to focus on a practical, efficient, strategically

successful structure.

We have a conservation easement on our ranch. To insure the preservation of our landscape, our wildlife, our ability to ranch and to keep a healthy ecosystem.

BUT

Some would say that National Security is a very important aspect to keeping border ranches safe and viable.

The conversations and opinions will continue and there will never be a solution that everyone is happy with...the most important thing is to reinstate some respect for those of us who have several aspects of personal vested interests, who are being assigned the blame for the consequences.

(b) (6)

On Tuesday, October 29, 2019, 05:09:36 AM MST, Radke, Bill <bill_radke@fws.gov> wrote:

Hi (b) (6); You may share the documents. They are nothing secret. Thanks, Bill

On Tue, Oct 29, 2019 at 4:35 AM (b) (6) <(b) (6)> wrote:

> Good Morning!
> Are the documents you sent me public knowledge?
> May I share them.
>
> I know we need to talk...I will call in the next day or two.
> Thanks, Kelly

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Range, Brent K
To: Fernandez, Juliette
Subject: Re: [EXTERNAL] Tucson Projects - Call with FWS
Date: Thursday, November 7, 2019 5:09:32 PM

Yes.

Brent K. Range

Acting Deputy Assistant Secretary

Public Safety, Resource Protection, Emergency Services

U.S. Department of the Interior

1849 C Street NW - Room 5128

Washington D.C.

20240

Cell: 202-897-7206

Office: 202-208-7431

Privileged and Confidential

On Nov 7, 2019, at 7:09 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> Thanks Brent, I have been in meetings the last two days but I plan to give you a call tomorrow. Will that work?
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell
>
> On Nov 7, 2019, at 4:08 PM, Brent Range <brent_range@ios.doi.gov> wrote:
>
> > Good job.

Brent K. Range

Acting Deputy Assistant Secretary

Public Safety, Resource Protection, Emergency Services

U.S. Department of the Interior

1849 C Street NW - Room 5128

Washington D.C.

20240

Cell: 202-897-7206

Office: 202-208-7431

Privileged and Confidential

On Nov 7, 2019, at 6:04 PM, Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> All,
> Per our call yesterday, please find the new model reflecting the updated numbers you provided. We appreciate your consideration of the following requests.
>
> Minimize the Glenn well to the fullest extent due to its proximity to the refuge and potential impacts.
>
> Please use the Mile Marker 9 well to the fullest degree
>
> We understand that the Mile Marker 18 well is underway. For any future wells, please consider moving them to 5 more miles from the refuge.
>
> We appreciate your consideration. Please let me know if you have any questions or if a site visit at some point would be beneficial.
>
> Thank you,
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Tue, Nov 5, 2019 at 9:45 PM (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) > wrote:

From: Juliette Fernandez <juliette_fernandez@fws.gov>
Sent: Tuesday, November 5, 2019 9:37 PM
To: Amy Lueders <amy_lueders@fws.gov>
Cc: Brent Range <brent_range@ios.doi.gov>; (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) >
Subject: Re: [EXTERNAL] For a call with FWS tomorrow

I will make myself available at that time.

Thank you,

Juliette Fernandez

Refuge Supervisor AZ/NM

505-248-6650 Office

505-933-3501 Cell

On Nov 5, 2019, at 5:20 PM, Amy Lueders <amy_lueders@fws.gov> wrote:

11 eastern/9 mtn works best for me. Juliette let us know if you can make that work. Thx Brent

Sent from my iPhone

On Nov 5, 2019, at 5:14 PM, Brent Range <brent_range@ios.doi.gov> wrote:

> Can you two make one of the times listed below? Paul is checking with Army Corp to see if the appropriate rep can also be on a coordination call to introduce Juliet and discuss our path forward.
>
> Let me know.
>
> Brent K. Range
>
> Acting Deputy Assistant Secretary
>
> Public Safety, Resource Protection, Emergency Services
>
> U.S. Department of the Interior
>
> 1849 C Street NW - Room 5128
>
> Washington D.C.
>
> 20240
>
> Cell: 202-897-7206
>
> Office: 202-208-7431

Privileged and Confidential

Begin forwarded message:

From: (b) (6), (b) (7)(C)
<(b) (6), (b) (7)(C)>
Date: November 5, 2019 at 7:02:50 PM EST
To: "Range, Brent" <brent_range@ios.doi.gov>
Subject: **[EXTERNAL] For a call with FWS tomorrow**

Availability tomorrow.

10AM Eastern
(8AM Mountain)

11AM Eastern
(9AM Mountain)

1:30PM Eastern
(11:30 Mountain)

(b) (6), (b) (7)(C)

Border Wall Program Management Office

U.S. Border Patrol

Phone: (b) (6), (b) (7)(C)

<Calculations DrawdownSBNWR_Addendum07Nov19.pdf>

From:	McIntyre, Julie
To:	Lester, Emily A CIV USARMY CESPL (USA)
Cc:	Olson, Troy A CIV USARMY CESPD (USA); (b) (6), (b) (7)(C); Fernandez, Juliette; Brent Range; Radke, Bill; Fernandez, Erin; Joaquin Baca; Brown, Keely N CIV USARMY CENWS (USA); Leemans, Adam J CPT USARMY ENGINEER SCHL (USA); Ozuna, Victor SPK; Turner, Anthony M CIV USARMY CEHNC (US); (b) (6), (b) (7)(C); David Boyes; jhutira@cogstone.com; O"Loughlin, James
Subject:	Re: [EXTERNAL] USFWS/CBP/USACE - SBNWR Well and Water Usage Discussion
Date:	Friday, November 22, 2019 1:50:10 PM

Greetings, All:

Many thanks for the call today. These are complicated issues, and it helps to have a team approach here.

Pasted in our Ecological Services suggestions pertaining to hydrology. These were crafted right after the initial scoping meetings with Fed agencies, before the deadline provided to agencies to submit recommendations.
They are somewhat broad-brush, as we were all still learning about these border projects and had not fully fleshed out how much water would be removed from the system. This was also before we fully understood the impact wells could have on species. Their contents remain applicable:

Hydrology

- **Avoid impacts to groundwater** by obtaining treated water from outside the immediate area for construction use.
- Implement the CBP-approved **Spill Protection Plan** to ensure any contaminants hazardous to the environment are properly handled.
- **Protect hydrological processes:**
  - Design, maintain, and monitor fence to ensure proper water flow
  - Keep water-ways open (this could benefit wildlife movement too)
  - Clear debris around structures after flood events
- **Monitoring hydrological** impacts above and below the border
- **Preserve wildlife corridors** in drainages and wetlands. The Quitobaquito wetland and riparian area is particularly important to many rare species. Learn of its location, and preserve its function as much as possible.
- **Maintain functioning hydrological conditions** and manage for impacts of structures and staging to avoid contamination, degradation, and erosion of aquatic habitats.
- **Prevent surface and groundwater withdrawals** that could negatively impact native aquatic species.

Here are species in the area:
BLACK DRAW
- Beautiful Shiner
- Yaqui Catfish
- Yaqui Chub
-Chiricahua Leopard Frog
- San Bernardino Springsnail
-Northern Mexican Gartersnake
-Hauachuca Water-umbel (plant- just note presence)

Critical habitat for:
-Beautiful Shiner
- Northern Mexican Gartersnake (proposed)
- Yaqui Catfish
- Yaqui Chub
- Yellow-billed Cuckoo (proposed)

San Pedro-
(when we get to this area)
Endangered and/or Threatened Species Present:
-Chiricahua Leopard Frog
-Northern Mexican Gartersnake
-Jaguar
-Ocelot
-Southwestern Willow Flycatcher
-Yellow-billed Cuckoo
-Northern Aplomado Falcon (EXPN)
- Mexican Spotted Owl
-Huachuca Water-umbel (plant)

Critical Habitat for:
-Northern Mexican Gartersnake (proposed)
-Yellow-billed Cuckoo (proposed)

Thanks again for the conversation and all of your efforts to consider impacts to our delicate desert ecosystems.

Julie

On Thu, Nov 14, 2019 at 4:16 PM Lester, Emily A CIV USARMY CESPL (USA) <Emily.A.Lester@usace.army.mil> wrote:

> Hello All,
>
> Please reserve the above date and time to review the updated USFWS Technical Report (attached) related to SBNWR well drawdown and project estimated water usage. Please share with those who should attend from USFWS, CBP or USACE.
>
> WebEx (b) (5)
> Access Code (b) (5)
> Security Code (b) (5)
>
> Thank you,

Emily Lester
NEPA Compliance Officer
Task Force Barrier
US Army Corps of Engineers
Emily.A.Lester@usace.army.mil

Tel: 602.230.6995 Office
Tel: 213.479.2132 Mobile

Building Strong!

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--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: Bill Radke
To: (b) (6)
Subject: Re: [EXTERNAL] VIC/ a short YouTUbe done by DBD...
Date: Friday, November 1, 2019 8:47:05 AM

Hi (b) (6); Thank you for forwarding this video, and thank you for your valid concerns. You are one of the few people who intimately know San Bernardino NWR. The FWS groundwater withdrawal model shows that the DHS contractor pumping rate will absolutely impact artesian flow on the refuge and Slaughter Ranch. The degree of drawdown is in question only because DHS contractors refuse to provide us an accurate withdrawal estimate. This issue is further complicated because contractors are drilling additional wells adjacent to the refuge, one less than 500 feet from our boundary, making the effects of all the incremental pumping efforts more difficult to accurately determine. Finally, because Slaughter Ranch now risks losing all of their domestic water due to this DHS project, they are also planning to drill a domestic water well, which will further draw from the aquifer. All this, because NEPA and other environmental laws were waived for the DHS project, rather than analyzing and mitigating potential impacts. Thanks for caring about this, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Oct 31, 2019, at 1:55 PM, (b) (6) <(b) (6)> wrote:

> https://www.youtube.com/watch?emci=f9ac7c4a-aaf9-e911-828b-2818784d6d68&emdi=86c71d4a-08fc-e911-828b-2818784d6d68&ceid=109763&v=MC9vJFDj7Yw&feature=youtu.be
>
> Bill, have you seen this? You should of course be aware, is CBD accurately depicting the threat to groundwater within the refuge?
>
> I just stumbled on this, CBD sends me things of great diversity and varying accuracy…

From: Radke, Bill
To: (b) (6)
Cc: Tasha Dolgoff; Cassondra Walker
Subject: Re: [EXTERNAL] Webster with notes
Date: Wednesday, December 11, 2019 7:49:59 AM

Hi (b) (6); Thank you for your bird list and notations, which are always interesting to us. The bittern is a great find. Thank you for reporting water levels when you see something that alarms you. As you likely already know, the ongoing border infrastructure construction is utilizing large volumes of groundwater from the San Bernardino Valley, and that water withdrawal is already impacting many refuge wells, ponds, and other wetlands. In response to anticipated impact to their existing domestic water supply, Slaughter Ranch owners have now also drilled a new well on their property to ensure their continued use of that private property. In an effort to initiate "life support" actions, refuge staff have salvaged fish and allowed three refuge ponds to go dry. We have installed water monitoring equipment at a variety of locations to help track changes in artesian flow and depth to water in monitoring wells. We are monitoring pond levels. We are developing/implementing contingency plans to protect at least a subset of the endangered fish population that once thrived on the refuge. We are hoping for the best, but are planning for the worst.

Incidental to all the more recent border infrastructure construction, Department of the Interior and Department of Homeland Security collaborated last year to fund a Southern Border Fuels Management Initiative. The multiple goals of this initiative include grassland restoration, wildlife management, endangered species recovery, and border security. Common ground between agencies was determined to include planned mesquite removal, which assists our grassland restoration objective and also opens up the viewscape to Border Patrol towers to increase effectiveness in locating and apprehending illegal activities. At San Bernardino NWR, this involved government contracts for tree removal at selected locations on the refuge. Selected mesquite are being grubbed and piled for ultimate burning. Existing grassland understory is expected to self-restore, obviously passing through an anticipated plant succession (= weed species) stage in the short term. Grassland restoration is a refuge priority and is something the refuge has sporadically accomplished on a smaller scale since its creation. Arguably, one can currently question why any mesquite removal relative to border security is necessary now that a 30-foot tall wall is being constructed across the south boundary of the refuge. I imagine that collaborative support funding from DHS to pursue this initiative will likely be re-evaluated.

The long-term monitoring you have accomplished will help us evaluate, in part, the effectiveness of this grassland restoration project. So, I hope your work will continue. I hope this helps you better understand our motives. I agree that all this concurrent activity on and adjacent to the refuge is somewhat alarming, and reminiscent of a war zone at times. We will do better to keep you informed of refuge management activities. Thank you for all your volunteer work.

Sincerely, Bill Radke

William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608

Cell: (520) 508-7180

On Sun, Dec 8, 2019 at 10:40 AM Merlin <(b) (6) > wrote:

> Dear Bill:
>
> Enclosed.
>
> Oasis Pond is very low, which I strongly suspect you know/intend, but which I mention in case you don't.
>
> My first visit in five or six weeks (off playing, versus playing here!).
>
> The most interesting bird was an American Bittern (the logjam has broken, briefly at least). It was at Ben New and simply flew to the far side of Ben New and dropped back in. If you are out there, you might give that pond a close, loud walk around. I had little of interest and little overall—I was not expecting many sparrows, and there weren't many. It seems that it has been a relatively mild winter so far based on the vegetation, but that did not translate into more lingering insectivores, etc.; in fact, there were fewer than normal (no Empidonax, only one vireo—a Cassin's), with a couple of Common Yellowthroats the most unusual. No sign of any montane or irruptive species.
>
> Obviously, I was interested to see what was happening along the Border.
>
> I was also interested to see that the Refuge was hard at work (even on Saturday). Having much time on my hands (few birds), I was able to concoct various scenarios (Bill is removing mesquites to save water; Bill has returned to plans to create a Cienega; Bill has extorted water from the Border Wall project to accomplish that; Bill has done all of the above). Two sentences of reply or forwarding a relevant document would doubtless dull my curiosity and otherwise inform me.
>
> Apart from the shortage of birds and The Wall, it was a lovely day and a mild one that Wimp Webster could thoroughly enjoy.

> I will admit that at SBNWR I really don't think much about traffic, so I was embarrassed to realize that I had a vehicle behind me when I had stopped to try to see a bird (the guy doing clearing yesterday).
>
> (b) (6)

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: (b) (6)
To: Radke, Bill
Subject: Re: [EXTERNAL] Wow the phones went out
Date: Thursday, October 31, 2019 5:19:15 PM

You bet...I will send the email by the end of the day...had to spend some time with our guests....K

On Thursday, October 31, 2019, 03:27:54 PM MST, Radke, Bill <bill_radke@fws.gov> wrote:

(b) (6); I think we talked long enough today, and covered a lot of ground (even before the phones went out). Thank you for listening, and thank you for your help, Bill

On Thu, Oct 31, 2019 at 1:13 PM (b) (6) <(b) (6)> wrote:

> Not sure what happened...our phones went out and just came back in...must have been a pole down...call me if you need to...however, all is good and we are good and thank you.
> Love, K

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From:	Tara Harris
To:	Jeffrey Sorensen
Cc:	Bill Radke; Tim Snow; Harden, Tasha; Bradley Poynter; Karen Klima
Subject:	RE: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use
Date:	Tuesday, December 31, 2019 9:04:21 AM

Thanks very much for putting all of this together, Jeff. We look forward to the phone call.

Tara

Tara Harris, Ph.D.
Director of Conservation and Science

Arizona Center for Nature Conservation
Phoenix Zoo | South Mountain Environmental Education Center
455 N. Galvin Parkway | Phoenix, AZ 85008
p 602.286.3800 x7311 | d 602.914.4317
tharris@phoenixzoo.org | phoenixzoo.org | smeec.org

From: Jeffrey Sorensen <jsorensen@azgfd.gov>
Sent: Tuesday, December 31, 2019 8:00 AM
To: Harden, Tasha <tasha_harden@fws.gov>; Bradley Poynter <BPoynter@phoenixzoo.org>; Tara Harris <tharris@phoenixzoo.org>; Karen Klima <kklima@azgfd.gov>
Cc: Bill Radke <bill_radke@fws.gov>; Tim Snow <tsnow@azgfd.gov>
Subject: Re: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use

Hello all,
Attached is the call in numbers and an outline of topics to discuss for our upcoming conf call on the San Bernardino springsnail on January 9 at 1pm. I've also attached some relevant docs on past site visits and the 2005 manuscript on the species and its habitat. Thanks!
Jeff

On Mon, Dec 23, 2019 at 8:00 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:

> Hi Tasha, Brad, Tara, and Karen,
> Let's schedule our conference call on the San Bernardino springsnail discussion for Thursday, January 9, at 1pm. I'll send you guys the call in numbers (...I need to check with my admin staff to reserve one of our two conference lines for that day and time). Thanks!
> Jeff
>
> On Mon, Dec 16, 2019 at 12:58 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > My schedule is pretty open so far for January.... 8-10 and 15-17 are open for me. It will more than likely just be me on the call so lets go ahead and set one up.
> >
> > On Thu, Dec 12, 2019 at 7:22 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> >
> > > Thanks Tasha and Bill. Good to know! If possible, it may be a good idea to have a secured

refuge population of those springsnails. The Phoenix Zoo folks have the facility and the experience maintaining springsnails in captivity. We should talk more about this, perhaps after the holidays. Between the zoo folks and several of us at AZGFD, we know how to collect and transport the snails safely. I'd like to visit the Slaughter Ranch again with you guys to do a more recent survey of that last population to assess how abundant they are. Are there any dates in early January that you and Bill are available for a conf call? I'll set that up and invite the zoo folks and our Tucson regional bios to the call.
Jeff

On Thu, Dec 12, 2019 at 2:38 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Jeff,
> I just finished talking with Bill. We are not currently seeing any impacts to the snails but we would be happy to work with you and the zoo to get a sample established elsewhere for good measures, given the current activity out there. We do not have the expertise to do the collection, relocation and such... so we will need assistance with the process.
>
> On Thu, Dec 12, 2019 at 12:01 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
>
> > Sounds good, thanks!
> > Jeff
> >
> > On Thu, Dec 12, 2019 at 11:14 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
> >
> > > Hi Jeff- Sorry we haven't responded yet, it has been a little busier than usual for us. Bill is around today (but currently out on refuge) When he gets back I will ask him if he will have time to call you or if he just wants to relay info through me. One of us will be in touch!
> > >
> > > On Thu, Dec 12, 2019 at 8:01 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> > >
> > > > Hi Bill and Tasha,
> > > > I have not heard back from you from my last email. Can you tell me what the status of the San Bernardino springsnail is on the Slaughter Ranch? Are you guys concerned about the loss of additional groundwater due to wells being used to build the border fence? Do you have any plans to attempt to salvage any springsnails and hold them in a refugia or on the San B NWR? Please let me know and how we can help. Thanks!
> > > > Jeff
> > > >
> > > > On Thu, Nov 14, 2019 at 11:58 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> > > >
> > > > > Hi Bill,
> > > > > Sorry it's been a long while since I've caught up with you on monitoring and management for the San Bernardino springsnail. I just talked with Doug Duncan, and got a message from the Phoenix Zoo Conservation Center staff about

concerns on the springsnail and groundwater water use related to the border wall construction. I'd like to talk with you and Tasha about this and any recommendations that you have.

The Phoenix Zoo staff have indicated they have the capacity to hold any salvaged springsnails in a refugia set up, if that is an option. They've had many years of experience and success maintaining captive populations of Page springsnails, Three Forks springsnails, and more recently Huachuca springsnails. The later two species are what they are currently holding in separate containment systems, although the few Three Forks springsnails in their population can be moved into a smaller system.

Please give me a call or email. My work cell is the best way to reach me (480-243-5496). I'd like to find out how I can help in this situation. Take care!
Jeff

--
JEFF A. SORENSEN | INVERTEBRATE WILDLIFE PROGRAM MANAGER

ARIZONA GAME AND FISH DEPARTMENT

OFFICE: 623.236.7740
MOBILE: 480.243.5496

EMAIL: jsorensen@azgfd.gov

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--
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Tasha Harden
Assistant Manager

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Join our new Conservation Membership program and ensure a wildlife legacy for the future.

From:	Bradley Poynter
To:	Duncan, Doug; Jeffrey Sorensen
Cc:	Harden, Tasha; Tara Harris; Karen Klima; Tim Snow; Bill Radke
Subject:	RE: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use
Date:	Tuesday, December 17, 2019 7:21:52 AM

Tara and my schedule look pretty open on those dates particularly after lunch time.
Wednesday mornings are a no go for us.
Thanks everyone!

Brad

Bradley M. Poynter
Curator of Conservation and Science

Arizona Center for Nature Conservation
Phoenix Zoo | South Mountain Environmental Education Center
455 N. Galvin Parkway | Phoenix, AZ 85008
p 602.286.3800 | d 602.286.3849 | c 216.534.3755
bpoynter@phoenixzoo.org | phoenixzoo.org | smeec.org

From: Duncan, Doug <doug_duncan@fws.gov>
Sent: Monday, December 16, 2019 6:03 PM
To: Jeffrey Sorensen <jsorensen@azgfd.gov>
Cc: Harden, Tasha <tasha_harden@fws.gov>; Bradley Poynter <BPoynter@phoenixzoo.org>; Tara Harris <tharris@phoenixzoo.org>; Karen Klima <kklima@azgfd.gov>; Tim Snow <tsnow@azgfd.gov>; Bill Radke <bill_radke@fws.gov>
Subject: Re: [EXTERNAL] Re: San Bernardino springsnail concerns on groundwater use

Nope...

I do nothing besides the CAP Program and the Gila topminnow, except when I get dragged kicking and screaming into border stuff!

Doug Duncan
#Gilatopminnow
Fish Biologist
Certified Fisheries Professional
Certified Wildlife Biologist
201 N. Bonita, Suite 141
Tucson, AZ 85745
520-670-6150 x236
FAX 6155

C 520-318-0599
www.fws.gov/southwest/es/arizona
"You are being paid to be an honest professional, not a pawn for somebody's comfort level."
Thomas Kovalicky

On Mon, Dec 16, 2019 at 5:24 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:

> Thanks, Tasha! I've cc'd Brad Poynter and Tara Harris from the Phoenix Zoo Conservation Center and Karen Klima and Tim Snow with the AZGFD regional office on these dates for a conf call. I'm out of the office with a training class on January 10, so that won't work for me, but any of the other days are good. Our conf call shouldn't take more than an hour at most. Mid-mornings or right after lunchtime are ideal for me. I'll set up the call in numbers and a short agenda of discussion points to cover, once we find a date and time that works best.
>
> Doug--would you like to be on this call?
> Jeff
>
> On Mon, Dec 16, 2019 at 12:58 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > My schedule is pretty open so far for January.... 8-10 and 15-17 are open for me. It will more than likely just be me on the call so lets go ahead and set one up.
> >
> > On Thu, Dec 12, 2019 at 7:22 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> >
> > > Thanks Tasha and Bill. Good to know! If possible, it may be a good idea to have a secured refuge population of those springsnails. The Phoenix Zoo folks have the facility and the experience maintaining springsnails in captivity. We should talk more about this, perhaps after the holidays. Between the zoo folks and several of us at AZGFD, we know how to collect and transport the snails safely. I'd like to visit the Slaughter Ranch again with you guys to do a more recent survey of that last population to assess how abundant they are. Are there any dates in early January that you and Bill are available for a conf call? I'll set that up and invite the zoo folks and our Tucson regional bios to the call.
> > > Jeff
> > >
> > > On Thu, Dec 12, 2019 at 2:38 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
> > >
> > > > Hi Jeff,
> > > > I just finished talking with Bill. We are not currently seeing any impacts to the snails but we would be happy to work with you and the zoo to get a sample established elsewhere for good measures, given the current activity out there. We do not have the expertise to do the collection, relocation and such... so we will need assistance with the process.

On Thu, Dec 12, 2019 at 12:01 PM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:

> Sounds good, thanks!
> Jeff
>
> On Thu, Dec 12, 2019 at 11:14 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Hi Jeff- Sorry we haven't responded yet, it has been a little busier than usual for us. Bill is around today (but currently out on refuge) When he gets back I will ask him if he will have time to call you or if he just wants to relay info through me. One of us will be in touch!
> >
> > On Thu, Dec 12, 2019 at 8:01 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> >
> > > Hi Bill and Tasha,
> > > I have not heard back from you from my last email. Can you tell me what the status of the San Bernardino springsnail is on the Slaughter Ranch? Are you guys concerned about the loss of additional groundwater due to wells being used to build the border fence? Do you have any plans to attempt to salvage any springsnails and hold them in a refugia or on the San B NWR? Please let me know and how we can help. Thanks!
> > > Jeff
> > >
> > > On Thu, Nov 14, 2019 at 11:58 AM Jeffrey Sorensen <jsorensen@azgfd.gov> wrote:
> > >
> > > > Hi Bill,
> > > > Sorry it's been a long while since I've caught up with you on monitoring and management for the San Bernardino springsnail. I just talked with Doug Duncan, and got a message from the Phoenix Zoo Conservation Center staff about concerns on the springsnail and groundwater water use related to the border wall construction. I'd like to talk with you and Tasha about this and any recommendations that you have.
> > > >
> > > > The Phoenix Zoo staff have indicated they have the capacity to hold any salvaged springsnails in a refugia set up, if that is an option. They've had many years of experience and success maintaining captive populations of Page springsnails, Three Forks springsnails, and more recently Huachuca springsnails. The later two species are what they are currently holding in separate containment systems, although the few Three Forks springsnails in their population can be moved into a smaller system.
> > > >
> > > > Please give me a call or email. My work cell is the best way to reach me (480-243-5496). I'd like to find out how I can help in this situation. Take care!
> > > > Jeff
> > > >
> > > > --

JEFF A. SORENSEN | INVERTEBRATE WILDLIFE PROGRAM MANAGER

ARIZONA GAME AND FISH DEPARTMENT

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MOBILE: 480.243.5496

EMAIL: jsorensen@azgfd.gov

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azgfd.gov | 5000 W. Carefree Highway, Phoenix, AZ 85086

Join our new Conservation Membership program and ensure a wildlife legacy for the future.

From: Radke, Bill
To: Fernandez, Juliette
Subject: Re: A couple of updates
Date: Wednesday, November 20, 2019 10:44:37 AM

Got it. Thanks, Bill

On Wed, Nov 20, 2019 at 10:24 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Contract on Cabeza Prieta scheduled to be awarded Dec 10.
> Looks like wildlife passages and cultural sites are moving forward.
> Sid, we are working on the "access" question. DOI solicitors are discussing this afternoon.
> Radke, we have our call at 12:30 this Friday. Joaquin will be on.
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 2 Connects

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Slone, Sid
To: Fernandez, Juliette
Cc: Bill Radke
Subject: Re: A couple of updates
Date: Wednesday, November 20, 2019 11:03:25 AM

Thanks for the info. I just sent you an email on the stuff we discussed. I really hope they can get a plan together for invasive species otherwise we're going to get an explosion of Sahara mustard spread on the Cabeza.

On Wed, Nov 20, 2019 at 10:24 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Contract on Cabeza Prieta scheduled to be awarded Dec 10.
> Looks like wildlife passages and cultural sites are moving forward.
> Sid, we are working on the "access" question. DOI solicitors are discussing this afternoon.
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> Refuge Supervisor AZ/NM
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> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 2 Connects

--
Sid Slone
Manager

Cabeza Prieta NWR
1611 N. 2nd Ave.
Ajo, AZ 85321

PH: 520-387-4993
CELL: 520-560-0555

From: Fernandez, Juliette
To: Radke, Bill
Cc: McIntyre, Julie
Subject: Re: Additional Contractor Water Withdrawal at SBNWR
Date: Thursday, December 12, 2019 10:01:22 AM

Ok let me get back to you.

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

On Thu, Dec 12, 2019 at 9:59 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Juliette and Julie; I just wanted to notify you both that, in spite of what we keep hearing from USACE and DHS about enforcing water withdrawal buffers around SBNWR, yesterday refuge staff spoke to contractors who were plumbing another one of the Glenn's existing wells to enable additional water withdrawal for border infrastructure construction. This is the Glenn's Hay Hollow Windmill Well, located 1,706 feet north of the refuge and about 2,777 feet from currently occupied refuge wetland habitat (critical habitat). We have all previously spoken about avoiding the sensitivity of this location, and I thought we had assurances this would not happen. Bill Radke
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

From: Kundargi, Darrell
To: Harden, Tasha
Cc: Baca, Joaquin; Cassondra Walker; Monty Mcdaniel
Subject: Re: arcgis and survey123 group
Date: Friday, December 20, 2019 11:29:23 AM

Great, thanks for adding us.

DK

On Fri, Dec 20, 2019 at 10:41 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hey guys- I just added you to our refuge AGOL group. This should give you access to the survey123 surveys we use to record pond levels and flow readings. These are also areas where Cass and Monty document when they turn water on or off and for what.... Bill will be sending Juliette weekly updates but I figured you may want more access to the numbers of these too? Any issues or questions just ask.
>
> --
> Tasha Harden
> Assistant Manager
>
> San Bernardino & Leslie Canyon NWRs
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104 x106
> Cell: 520-368-6004
> Fax: 520-364-2130

--

****

Darrell Kundargi
Hydrologist
Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW
Albuquerque, NM 87102

Ph: (505) 248-6430
Cell: (505) 362-3075
www.facebook.com/USFWS Water Resources

From: Harden, Tasha
To: Baca, Joaquin
Cc: Cassondra Walker
Subject: Re: attachment
Date: Monday, January 13, 2020 1:42:02 PM
Attachments: SanBernardinoSharp_20200113_134624.pdf

There are two ponds at #13
There is a second pond at #21, twin 2
And Bath house pond is missing
If he is doing riparian areas that typically hold water there are a couple other areas to include...
I will include what once was at hay hollow draw even though it is now gone...

If I need to digitize all this in GIS just let me know.

Cass if you see anything else I missed let us know

On Mon, Jan 13, 2020 at 12:24 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> ---------- Forwarded message ---------
> From: **Sesnie, Steven** <steven_sesnie@fws.gov>
> Date: Mon, Jan 13, 2020 at 9:45 AM
> Subject: attachment
> To: Joaquin Baca <joaquin_baca@fws.gov>, Grant Harris <Grant_Harris@fws.gov>
>
> Sorry, here is the attachment.
>
> --
> Steven E. Sesnie, Ph.D.
> Spatial Ecologist
> U.S. Fish & Wildlife Service
> Southwest Region
> P.O. Box 1306
> Albuquerque, NM 87103-1306
> 505-248-6631 office
> 505-280-9903 cell
> 505-248-6460 fax
> Webpage: https://southwestnwrsnatresources.wordpress.com/biological-sciences/steven-e-sesnie-ph-d/
>
> Call
> Send SMS
> Add to Skype
> You'll need Skype CreditFree via Skype
>
> --
> Joaquin Baca

Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
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Fax: 520-364-2130

From: Juliette Fernandez
To: Bill Radke
Cc: steve_reagan@fws.gov; Grant_Harris@fws.gov; joaquin_baca@fws.gov; Julie McIntyre
Subject: Re: black draw crossing structure as of 01-13-2020
Date: Tuesday, January 14, 2020 1:59:15 PM

All,
I spoke to the corps and the structure is temporary. I asked for clarification on when the permanent structure will be implemented and expressed some concern about the current structure being used for any extended period of time. I sent a follow-up email to Bill and Tasha for some bullet points to help me address it further.

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

On Jan 13, 2020, at 2:51 PM, Bill Radke <bill_radke@fws.gov> wrote:

All. FYI - This concrete block in Black Draw will back up water on the refuge and create additional problems. Bill Radke

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

From: "Harden, Tasha" <tasha_harden@fws.gov>
Date: January 13, 2020 at 1:35:27 PM MST
To: Bill Radke <bill_radke@fws.gov>
Subject: black draw crossing structure as of 01-13-2020

Cass was told it was completed on the 10th, by an environmental consultant she met while there taking pics. The consultant told Cass that the environmental person who was supposed to be present for construction didn't even know about it, she just happened to come out and see it.

--
Tasha Harden

Assistant Manager

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<IMG_2996.JPG>

<IMG_2998.JPG>

<IMG_2997.JPG>

<IMG_3001.JPG>

<IMG_2999.JPG>

From: Radke, Bill
To: Fernandez, Juliette
Cc: Slone, Sid
Subject: Re: CBP moving forward
Date: Tuesday, November 5, 2019 6:52:54 AM
Importance: High

Hi Juliette; This seems like a good way to consistently conduct border related business. I think it would be a good idea for Sid, you, and I to have a quick call to hear how you want to implement this. Today would be difficult for me due to other meetings but other days this week can work for me. Thank you, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

On Nov 4, 2019, at 5:03 PM, Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Hi Bill and Sid,
> Amy asked that I serve as main POC with CBP and DHS on border related issues. This will mean that requests they have of us will come to me and I will work with you to address them and vice versa. Let me know if you would like to have a call on this so we can talk about it further.
>
> Thanks,
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 2 Connects

From: Juliette Fernandez
To: Radke, Bill
Cc: Tasha Dolgoff
Subject: Re: CBP Response to SBNWR Comments Regarding Wall Construction
Date: Wednesday, January 1, 2020 9:20:39 AM

Thanks Bill

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

On Dec 30, 2019, at 2:41 PM, Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Juliette; I just wanted to pass this along to you. It is the December 6, 2019 U.S. Customs and Border Protection acknowledgement that they received my refuge comments and concerns regarding their proposed border infrastructure construction, which I mailed to them on June 10, 2019. Bill Radke
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180
>
> <CBP Response to FWS Comments dated December 6 2019.pdf>

From: Harden, Tasha
To: Baca, Joaquin
Cc: Cassondra Walker; Darrell Kundargi
Subject: Re: Data Week of Dec 23
Date: Friday, December 20, 2019 2:20:25 PM

Yep, Cass is already on that!

On Fri, Dec 20, 2019 at 1:23 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Tasha,
>
> Next week or which ever day you guys download the data, will you leave the transducers collecting data even if you leave the wells flowing. We would like to have recordings of pressure before you turn on wells and after. Also will you collect at Twin even though the flow continues.
>
> Thanks
>
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549
> www.facebook.com/USFWS Water Resources
>
> *"A river is more than an amenity, it is a treasure."*
> *Justice Oliver Wendell Holmes*

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From: McIntyre, Julie
To: Fernandez, Juliette
Cc: Radke, Bill
Subject: Re: December 12, 2019 Border Infrastructure Construction Meeting?
Date: Wednesday, December 11, 2019 11:57:00 AM

Hi Juliette,

No, not a shred of info on any bridges, hence my question on the call today. I have only what Bill has provided here.

Julie

On Wed, Dec 11, 2019 at 11:49 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Juli,
> Today's call was the first I had heard about a bridge. Do you have any more details?
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 2 Connects
>
> On Tue, Dec 10, 2019 at 5:48 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Juliette and Julie; For a while now, I have heard rumors from landowners about a December 12 meeting during which USACE/DHS plan to explain their border barrier construction plans for major stream crossings (Black Draw, Hay Hollow Wash, Silver Creek, maybe San Pedro River) in southeast Arizona. I have heard nothing from any agency officials about this topic. Have either of you heard any information about a December 12 informational meeting, and if so, are you able to tell me the location and timing? Do you feel this potential meeting is something that refuge personnel should attend? Thank you, Bill Radke
> >
> > --
> > William R. Radke; Project Leader
> > U.S. Fish and Wildlife Service
> > Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> > P.O. Box 3509
> > Douglas, AZ 85608
> > Cell: (520) 508-7180

--
Julie McIntyre, Ph.D.
Assistant Field Supervisor
Pollinator Coordinator, Southwest Region (R2)

US Fish & Wildlife Service
Arizona Ecological Services, Tucson Field Office
201 N. Bonita Avenue, Suite 141
Tucson, Arizona 85745

Office Phone: 520.670.6150 x223
Work Cell: 602.525.4470
Fax #: 520.670-6155

From: Radke, Bill
To: Baca, Joaquin
Subject: Re: DHS Water Use Meeting Being Scheduled
Date: Tuesday, October 15, 2019 12:47:30 PM

Joaquin; DHS and ACOE have not yet even sent me an official invitation, but they did call and identified their desire for a meeting in Douglas tomorrow. I will let you know what time the meeting will occur, and if they are set up for it, I would appreciate you calling in if you can. Stay tuned, and I will tell you what I learn. Thank you, Bill Radke

On Tue, Oct 15, 2019 at 11:35 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Hey Bill,
>
> You're welcome. I have to give credit to Ariel for the heavy lifting on the legal aspects. Is it possible to call in to the meeting tomorrow, and is that something you would want? It seems it would be a big step to be at the table as they discuss their water usage plans.
>
> On Tue, Oct 15, 2019 at 11:41 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Joaquin; I just received a phone call from Army Corps of Engineers telling me they will be scheduling a meeting in Douglas, Arizona tomorrow to identify and discuss groundwater use concerns. The hydrology reports and legal analyses you prepared are already having an immediate influence on communication. Thank you for helping us with this issue. Sincerely, Bill Radke
> >
> > --
> > William R. Radke; Project Leader
> > U.S. Fish and Wildlife Service
> > Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> > P.O. Box 3509
> > Douglas, AZ 85608
> > Cell: (520) 508-7180
>
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549
> www.facebook.com/USFWS Water Resources

--
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U.S. Fish and Wildlife Service
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Douglas, AZ 85608

Cell: (520) 508-7180

From: Gray, Lesli
To: Fernandez, Juliette
Subject: Re: For review
Date: Tuesday, November 26, 2019 9:45:55 AM
Attachments: Aquifer.docx
Importance: High

Hi Juliette, it looks good. I had a few minor edits. On the Wells and Ponds document will they know what the blue and pink symbols represent? Thank you for sharing with me. Lesli

On Tue, Nov 26, 2019 at 10:29 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 2 Connects

--
Lesli A. Gray
Congressional Liaison
U.S. Fish and Wildlife Service
972-439-4542
lesli_gray@fws.gov
www.fws.gov/southwest

From: Walker, Cassondra
To: Baca, Joaquin
Cc: Ariel MacMillan; Darrell Kundargi
Subject: Re: GPS locations for wells
Date: Thursday, January 2, 2020 8:24:41 AM
Attachments: SanB_Ponds and Wells.pdf

Ok....Also, here is an updated map of wells and ponds on San B.

On Thu, Jan 2, 2020 at 8:19 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> thank you for this. We don't need bar boot if its on leslie canyon.
>
> On Wed, Jan 1, 2020 at 9:46 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> > I still need to get coordinates for Bar Boot, but here are the others in NAD 83 UTM zone 12:
> >
> > | | | |
> > |---|---|---|
> > | Leslie Canyon South | 641779 | 3496096 |
> > | Leslie Canyon North | 641777 | 3496204 |
> > | Leslie Canyon Road | 641774 | 3496251 |
> > | Leslie Canyon Upstream | 641747 | 3496238 |
> > | Slaughter Ranch | 663660 | 3468264 |
> > | Snail Spring | 663860 | 3468216 |
> > | Mitigation | 664144 | 3468157 |
> > | Frog | 665000 | 3468129 |
> > | Black Draw East | 665474 | 3467978 |
> > | Black Draw South | 665465 | 3467975 |
> > | Black Draw North | 665464 | 3467986 |
> > | Cemetery North | 664997 | 3468678 |
> > | Cemetery South | 665000 | 3468672 |
> > | Bunting | 665377 | 3470257 |
> > | Hay Hollow | 667607 | 3468902 |
> > | Hay Hollow Ponds | 667538 | 3468881 |
> > | Hay Hollow Upstream | 667529 | 3468827 |
> > | Hay Hollow Downstream | 667548 | 3468736 |
> >
> > --
> > Cassondra Walker, PhD
> > US Fish and Wildlife Service
> > Refuge Biologist
> > San Bernardino and Leslie Canyon NWR
> >
> > PO Box 3509
> > 7628 N Hwy 191
> > Douglas AZ 85608
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> > Cell: 520-368-6010
> > Fax: 520-364-2130

--
Joaquin Baca
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www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

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Fax: 520-364-2130

From: Baca, Joaquin
To: Walker, Cassondra
Cc: Ariel MacMillan; Darrell Kundargi
Subject: Re: GPS locations for wells
Date: Thursday, January 2, 2020 8:33:53 AM

Awesome, thanks!

On Thu, Jan 2, 2020 at 8:24 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Ok....Also, here is an updated map of wells and ponds on San B.
>
> On Thu, Jan 2, 2020 at 8:19 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
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> > > |---|---|---|
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> > > | Leslie Canyon North | 641777 | 3496204 |
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> > > | Leslie Canyon Upstream | 641747 | 3496238 |
> > > | Slaughter Ranch | 663660 | 3468264 |
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> > > | Frog | 665000 | 3468129 |
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> > > | Black Draw South | 665465 | 3467975 |
> > > | Black Draw North | 665464 | 3467986 |
> > > | Cemetery North | 664997 | 3468678 |
> > > | Cemetery South | 665000 | 3468672 |
> > > | Bunting | 665377 | 3470257 |
> > > | Hay Hollow | 667607 | 3468902 |
> > > | Hay Hollow Ponds | 667538 | 3468881 |
> > > | Hay Hollow Upstream | 667529 | 3468827 |
> > > | Hay Hollow Downstream | 667548 | 3468736 |
> > >
> > > --
> > > Cassondra Walker, PhD
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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Radke, Bill
To: Fernandez, Juliette
Subject: Re: Hay Hollow Crossing 11/29/19
Date: Monday, December 16, 2019 9:36:17 AM

Juliette; I am sure the contractors have been "repairing" the crossing to provide them access to the border, but i do not know the current status. I will ask staff to check on this. Thanks, Bill

On Mon, Dec 16, 2019 at 9:33 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Thanks Bill. Is this the current state?
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 6,7,8 Connects
>
> On Mon, Dec 16, 2019 at 9:04 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Hi Juliette; Just an FYI, and to keep this issue on everyone's radar during the weekly border conference calls, these photographs depict some of the damage inflicted on border infrastructure access roads (and subsequently onto SBNWR) during the recent Thanksgiving Week flood event in the San Bernardino Valley. As background, to access the international border, DHS Contractors built this culvert crossing on Glenn Ranch land immediately upstream from SBNWR to bridge Hay Hollow Wash. The flood event, not unusual for Hay Hollow Wash during the summer and winter rainy seasons, mobilized and piled brush and other debris against the upstream end of the culverts - effectively damming the flow until the "bridge" ultimately failed. The resulting wall of water then travelled rapidly downstream and slammed into refuge infrastructure (rock-filled wire caged erosion control gabions that have been in place for decades). This damaged and/or washed out at least two refuge gabions and downcut the refuge stream bed by six feet, which will require repair. Additionally, the volume of silt mobilized by the sudden failure of the DHS road crossing, combined with the erosive force of the wall of water coursing downstream, has filled in refuge wetlands (occupied critical habitat for endangered fish) in Hay Hollow Wash and impacted (eroded) known cultural resource sites. It would be great if the engineering of the DHS roadway that crosses Hay Hollow Wash would more carefully and effectively address such regular flood events that flow through this major drainage. Refuge staff are continuing to investigate damage and will begin to prepare a damage assessment. Please tell me what else we can do to help with this process. Thank you, Bill Radke
> >
> > ---------- Forwarded message ---------
> > From: **Walker, Cassondra** <cassondra_walker@fws.gov>

Date: Mon, Dec 16, 2019 at 6:54 AM
Subject: Hay Hollow Crossing 11/29/19
To: Radke, Bill <bill_radke@fws.gov>, Harden, Tasha <tasha_harden@fws.gov>

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist

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> Fax: 520-364-2130
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> --
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> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

--
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Fernandez, Juliette
Subject: Re: Hay Hollow Crossing 11/29/19
Date: Monday, December 16, 2019 9:36:17 AM
Importance: High

Juliette; I am sure the contractors have been "repairing" the crossing to provide them access to the border, but i do not know the current status. I will ask staff to check on this. Thanks, Bill

On Mon, Dec 16, 2019 at 9:33 AM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Thanks Bill. Is this the current state?
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
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> U.S. Fish and Wildlife Service
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> Region 6,7,8 Connects
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> On Mon, Dec 16, 2019 at 9:04 AM Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Hi Juliette; Just an FYI, and to keep this issue on everyone's radar during the weekly border conference calls, these photographs depict some of the damage inflicted on border infrastructure access roads (and subsequently onto SBNWR) during the recent Thanksgiving Week flood event in the San Bernardino Valley. As background, to access the international border, DHS Contractors built this culvert crossing on Glenn Ranch land immediately upstream from SBNWR to bridge Hay Hollow Wash. The flood event, not unusual for Hay Hollow Wash during the summer and winter rainy seasons, mobilized and piled brush and other debris against the upstream end of the culverts - effectively damming the flow until the "bridge" ultimately failed. The resulting wall of water then travelled rapidly downstream and slammed into refuge infrastructure (rock-filled wire caged erosion control gabions that have been in place for decades). This damaged and/or washed out at least two refuge gabions and downcut the refuge stream bed by six feet, which will require repair. Additionally, the volume of silt mobilized by the sudden failure of the DHS road crossing, combined with the erosive force of the wall of water coursing downstream, has filled in refuge wetlands (occupied critical habitat for endangered fish) in Hay Hollow Wash and impacted (eroded) (b) (3) (B) [redacted] It would be great if the engineering of the DHS roadway that crosses Hay Hollow Wash would more carefully and effectively address such regular flood events that flow through this major drainage. Refuge staff are continuing to investigate damage and will begin to prepare a damage assessment. Please tell me what else we can do to help with this process. Thank you, Bill Radke
> >
> > ---------- Forwarded message ---------

From: **Walker, Cassondra** <cassondra_walker@fws.gov>
Date: Mon, Dec 16, 2019 at 6:54 AM
Subject: Hay Hollow Crossing 11/29/19
To: Radke, Bill <bill_radke@fws.gov>, Harden, Tasha <tasha_harden@fws.gov>

--
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--
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Range, Brent K
To: Fernandez, Juliette
Subject: Re: Hay Hollow crossing 12/16/19
Date: Tuesday, December 17, 2019 2:12:26 PM

Copy

Brent K. Range
Program Manager - Inter-agency Borderland Coordinator and Field Communications
Office of the Secretary
U.S. Department of the Interior
1849 C Street NW - Room 5128
Washington D.C.
20240

Cell: 202-897-7206

Office: 202-208-7431

Privileged and Confidential

On Dec 17, 2019, at 4:11 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> Two different locations
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell
>
> Begin forwarded message:
>
> *From:* "Radke, Bill" <bill_radke@fws.gov>
> *Date:* December 17, 2019 at 1:15:19 PM MST
> *To:* "Fernandez, Juliette" <juliette_fernandez@fws.gov>
> *Subject:* *Re: Hay Hollow crossing 12/16/19*
>
> Hi Juliette; This Hay Hollow Wash Culvert Crossing crossing is immediately adjacent to the Glenn's Hay Hollow Windmill. Attached are maps that Tasha just made showing the locations of the Hay Hollow Wash Culvert Crossing and the Hay Hollow Windmill in relation to the Hay Hollow Border Low Water Concrete Crossing and the Black Draw Border Crossing.
>
> As far as the "steel bridge," other than from you, I have not ever heard about that from anybody and am not sure where they will place that bridge.

I am unaware of any existing steel bridge at any location except for Geronimo Trail Road (County Road at Silver Creek, Black Draw, and Hay Hollow - all well to the north or west of the refuge).

Beginning in 2009, and until a few months ago, there was a "railroad flat car" bridge that spanned Black Draw at the border road (extreme south side of the refuge in the Roosevelt Easement). That bridge was removed by DHS contractors and replaced with culverts and dirt (same design as at the Hay Hollow Wash Crossing) to allow equipment to use the crossing (the bridge weight limit would not support the water trucks, heavy equipment, and wall panels).

No refuge employee has looked at the Black Draw Border (dirt-covered culvert) Crossing since the flood, as it has been too wet and muddy to access that location. I imagine that the Black Draw Border (dirt-covered culvert) Crossing was also severely damaged by the Thanksgiving Week flood event. The difference being that the water would have impounded and backed up onto the south end of the refuge before finally blowing out the border crossing and sending the wall of water into Mexico.

I hope this helps, but please tell me if you need more information. Thank you for helping us with so many issues, Bill Radke

On Tue, Dec 17, 2019 at 12:21 PM Fernandez, Juliette < juliette_fernandez@fws.gov> wrote:

> How far away of this is from the border? Is this a different location than
>
> where the steel bridge is? Did it blow out in two areas? If a call is
>
> easier, let me know, just want to make sure I understand where this is and
>
> were the impacted lands are. If you have a map, that would help.

Juliette Fernandez

Refuge Supervisor AZ/NM

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505-248-6460 Fax

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P.O. Box 1306, Room 4112

Albuquerque, NM 87103-1306

Region 6,7,8 Connects <https://sites.google.com/a/fws.gov/r2-nwrs/>

On Tue, Dec 17, 2019 at 7:07 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Juliette; Regarding our communications about the Hay Hollow Wash
>
> Crossing constructed by DHS contractors just upstream from SBNWR in support
>
> of their ongoing border infrastructure project, Biologist Walker visited
>
> the area yesterday and provided the following pictures. Contractors
>
> recently (this week) "repaired" the washed out crossing by simply piling
>
> more soil into the wash to replace all that was previously washed
>
> downstream into critical habitat on SBNWR back in late November.
>
> Additionally, they "armored" the loose soil roadway with rock rip-rap.
>
> This will likely last until the next flood event washes it

away again.

This will be a continual problem for the downstream refuge land and

critical habitat for endangered fish until it is correctly addressed and

engineered to sustain the large flood events that frequent this drainage.

Any work the FWS accomplishes on the downstream refuge, to repair all of

the previously damaged refuge infrastructure, will be at continued risk of

repeated damage/loss due to this inadequate upstream crossing. Thank you,

Bill Radke

---------- Forwarded message ---------

From: Cassondra Walker <cassondra_walker@fws.gov>

Date: Mon, Dec 16, 2019 at 3:34 PM

Subject: Hay Hollow crossing 12/16/19

To: <bill_radke@fws.gov>, <tasha_harden@fws.gov>

[image: image2.jpeg]

[image: image1.jpeg]

[image: image3.jpeg]

Cassondra Walker, PhD

US Fish and Wildlife Service

Refuge Biologist

San Bernardino and Leslie Canyon NWR

PO Box 3509

7628 N Hwy 191

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--

William R. Radke; Project Leader

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--
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Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

<image2.jpeg>

<image1.jpeg>

<image3.jpeg>

<Hay Hollow Wash Culvert Crossing and Windmill Location image.png>

<SBNWR DHS Water Crossing Image.png>

From: Fernandez, Juliette
To: Radke, Bill
Subject: Re: Hay Hollow crossing 12/16/19
Date: Tuesday, December 17, 2019 12:21:12 PM

How far away of this is from the border? Is this a different location than where the steel bridge is? Did it blow out in two areas? If a call is easier, let me know, just want to make sure I understand where this is and were the impacted lands are. If you have a map, that would help.

Juliette Fernandez
Refuge Supervisor AZ/NM

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505-933-3501 Cell
505-248-6460 Fax

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P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 6,7,8 Connects

On Tue, Dec 17, 2019 at 7:07 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Juliette; Regarding our communications about the Hay Hollow Wash Crossing constructed by DHS contractors just upstream from SBNWR in support of their ongoing border infrastructure project, Biologist Walker visited the area yesterday and provided the following pictures. Contractors recently (this week) "repaired" the washed out crossing by simply piling more soil into the wash to replace all that was previously washed downstream into critical habitat on SBNWR back in late November. Additionally, they "armored" the loose soil roadway with rock rip-rap. This will likely last until the next flood event washes it away again. This will be a continual problem for the downstream refuge land and critical habitat for endangered fish until it is correctly addressed and engineered to sustain the large flood events that frequent this drainage. Any work the FWS accomplishes on the downstream refuge, to repair all of the previously damaged refuge infrastructure, will be at continued risk of repeated damage/loss due to this inadequate upstream crossing. Thank you, Bill Radke
>
> ---------- Forwarded message ---------
> From: **Cassondra Walker** <cassondra_walker@fws.gov>
> Date: Mon, Dec 16, 2019 at 3:34 PM
> Subject: Hay Hollow crossing 12/16/19
> To: <bill_radke@fws.gov>, <tasha_harden@fws.gov>

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P.O. Box 3509
Douglas, AZ 85608
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From: Walker, Cassondra
To: Harden, Tasha
Subject: Re: Hay Hollow Upstream
Date: Tuesday, December 3, 2019 2:00:25 PM
Attachments: Well_Data_Analysis_3Dec19.docx

Here is the new data...

On Tue, Nov 26, 2019 at 1:13 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Here is a little write up about the Hay Hollow Upstream Well. I made it a memorandum so it would look a little more official.
>
> --
> Cassondra Walker, PhD
> US Fish and Wildlife Service
> Refuge Biologist
> San Bernardino and Leslie Canyon NWR
>
> PO Box 3509
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> Douglas AZ 85608
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Fax: 520-364-2130

From: Bill Radke
To: Tasha Harden
Subject: Re: Hay Hollow Wash Culvert Crossing "Before" Pictures
Date: Wednesday, December 18, 2019 12:22:23 PM

Good plan. Thanks

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

> On Dec 18, 2019, at 11:09 AM, Tasha Harden <tasha_harden@fws.gov> wrote:
>
> Would you like everyone to send me their weekly updates first? I would
> then compile them into one document to send you each week. I'm good
> either way. Just want to check.
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
>
>> On Dec 18, 2019, at 9:12 AM, Radke, Bill <bill_radke@fws.gov> wrote:
>>
>> All; Attached are photographs I took October 31, 2019 of the Hay Hollow
>> Wash Culvert Crossing on the Glenn Ranch. Given the volumes of water that
>> flash through this drainage on a regular basis, I anticipated the "culverts
>> covered with loose dirt" engineering would be a problem. We have
>> previously identified this issue with DHS and USACE multiple times but our
>> advice has never been heeded. Even now, after the Thanksgiving Week flood
>> event damaged the crossing, sent a wall of water into the refuge following
>> catastrophic failure of their culvert system, washed tons of sediment onto
>> the refuge into designated critical habitat for endangered fish, and
>> significantly damaged all three erosion control gabions that have otherwise
>> worked effectively for the past 20 years, DHS contractors have "fixed" the
>> problem by simply piling more dirt on top of the failed culverts and
>> "armoring" that dirt with rock rip-rap. The next flood will send this
>> right onto the refuge again. While we need to repair refuge erosion
>> control gabions and restore wetland habitats in Hay Hollow Wash as soon as
>> possible, it does not seem prudent or cost effective to conduct that work
>> at the risk of losing it all again because of an inadequately designed
>> stream crossing upstream from the refuge.
>>
>> So, for now, the best we can do is:
>>
>> 1) Complete a damage assessment of all associated refuge infrastructure
>> (boundary fence, gabions, downcut stream channel, monitoring
>> wells/transducers, access roads, etc). We need measurements of wash-outs
>> and missing gabion chunks, estimated volumes of rock/fill needed for
>> repairs, is the Hay Hollow pond outlet pipe functioning, is there any
>> wetland remaining that has live fish, is there any Huachuca water umbel

>> remaining, did the monitoring well suffer flooding and is the transducer
>> still functioning, is our boundary fence still there, were cultural
>> resources damaged, etc. Then we need to estimate repair costs and
>> associated staff time (including time spent doing the damage assessment).
>> I also will need a running total of the costs we have had to incur for
>> purchasing monitoring equipment, etc.
>>
>> 2) Continue our monitoring (wildlife trail cameras, water levels, well
>> pressure, inflow volumes, transducers, etc). Region-2 wants us to work
>> with Joaquin to analyze our data and provide it to Juliette in an
>> understandable format. She also wants weekly updates on our issues ("The
>> transducers were pulled from XX following their two-week deployment, and
>> water flow was resumed into ponds," or " pond levels remained stable, and
>> well monitoring showed an upswing, perhaps due to the recent flood
>> event."). These statements should likely be reviewed by me before we
>> submit them to anyone.
>>
>> 3) Document everything with photographs. Cell phone cameras are better
>> than nothing, but use a better camera if possible. It is especially
>> important to photo-document conditions following flood events, and to
>> document "new construction activities" by contractors. Basically, anything
>> that could be a problem for us (leaking oil from trucks, other
>> contaminants, piles of fill in the watershed, stuck vehicles, safety
>> hazards) should be photographed and provided to me for filing.
>>
>> 4) Work to install monitoring equipment into the Slaughter Ranch new well.
>> Region-2 wants a pressure transducer in that well since it is our best hope
>> for monitoring the deep aquifer as close to the Glenn Ranch Well as
>> possible. We should also have a flow meter on this well to measure the
>> volume of water being withdrawn from the well. Work with Fred to make that
>> happen, and tell me if Allan Finks needs additional information. We need
>> to share all our Slaughter Ranch data with Slaughter Ranch personnel.
>>
>> Please email me the information you gather, so I am able to check it from
>> my cell phone when I am not otherwise available.
>>
>> Thank you, everybody, for working through this emergency so efficiently and
>> so well. Bill
>>
>> --
>> William R. Radke; Project Leader
>> U.S. Fish and Wildlife Service
>> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
>> P.O. Box 3509
>> Douglas, AZ 85608
>> Cell: (520) 508-7180
>> <IMG_1035 Sign at Roadway to Hay Hollow Wash Culvert on Glenn Ranch.jpg>
>> <IMG_1022 Downstream side of Hay Hollow Wash Culvert Crossing on Glenn Ranch 103119.jpg>
>> <IMG_1018 Upstream side of Hay Hollow Wash Culvert Crossing on Glenn Ranch 103119.jpg>
>> <IMG_1016 Hay Hollow Wash Culvert Crossing on Glenn Ranch 103119.jpg>
>> <Hay Hollow Wash Culvert Crossing and Windmill Location on Glenn Ranch - Refuge Boundary is black line.png>

From:	Peter Burck
To:	Fernandez, Juliette; Benjamin Padilla
Cc:	Grant Harris; Steve Reagan; David Stewart; Darrell Kundargi; Joaquin Baca; Bill Radke; Sesnie, Steven; Ariel MacMillan
Subject:	Re: Hydrology meeting Monday, January 13th
Date:	Thursday, January 9, 2020 5:34:38 PM

Hi Ben,

I'm forwarding this message from Juliette.

Peter

Sent from my iPhone

On Jan 9, 2020, at 5:13 PM, Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Team,
> Thank you for the work everybody is doing on the San Bernardino NWR project. I look forward to meeting with you again on Monday. We will meet in the 4th floor conference room and call Bill at 3:30pm.
>
> As we know, we don't have the luxury of time on this issue so please be prepared to discuss current findings and ideas for addressing them. We need to identify any gaps in data/information, how to get it ASAP, what additional help/expertise/resources we need to acquire and how this work should be presented.
>
> Please visit the below link with assignments. We will touch on each one during the meeting. Everything we present should be biologically sound, easily understood and legally defensible. Look at your projects through that lens.
>
> https://docs.google.com/document/d/16nNPH-d9Lk_hsUC4_IegkWo0JEqDVwIJYwUW6Fn5YUw/edit?usp=sharing
>
> I'm sorry, I don't know Ben's last name!!! Please share this with him.
>
> With immense thanks,
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
>
> 505-248-6650 Office
> 505-933-3501 Cell
> 505-248-6460 Fax
>
> U.S. Fish and Wildlife Service
> P.O. Box 1306, Room 4112
> Albuquerque, NM 87103-1306
>
> Region 6,7,8 Connects

From:	Darrell Kundargi
To:	Walker, Cassondra
Cc:	Harden, Tasha; Monty Mcdaniel; Baca, Joaquin; Bill Radke; Benjamin Padilla
Subject:	Re: Important: Artesian Pressure vs. Flow
Date:	Tuesday, January 7, 2020 9:14:54 AM

Hi Cass,

Thanks for all the info. To keep the data collection and analysis manageable I think we should only model and measure a subset of the 8 wells, and focus on the most important wells for the T&E species. All of us need to be on the same page as to which wells are the most important to measure.If mitigation, a hollow, bunting, and twin are the four most important wells then we're good to go because we're collecting data there. If they're not the most important wells then we should get transducers on those wells as soon as we can.

To answer your question, getting flow data is not the first thing that needs to happen, but we do need to start collecting it as soon as we can. I would suggest that you take readings from the flowmeter and double check it with a bucket filled test as often as is manageable for you guys. Weekly flow meter readings and budget test should be sufficient. If you miss the occasional weekly reading because of other things going on that's OK. I would stress that recording the date and time of the bucket test and flow meter readings is very important so I can correlate it to the well pressure data.

Again, don't hesitate to contact me with any questions. I want to make sure that all of us are on the same page.

Best,

Darrell

Sent from my iPhone

On Jan 6, 2020, at 6:29 PM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Darrell,
>
> We have eight artesian wells that feed our ponds. Here are the well/pond combos:
>
> Mitigation Well-> Yaqui pond (dry)
> Bath House Well -> Bath House, Phd 1, and Phd 2
> Robertson Well -> Robertson Cienega
> Hackberry Well-> Brasher, Cobble, Magoffin, Ben New, Urquides (dry)
> Twin -> Twin 1, Twin 2
> Oasis -> Oasis, Mesquite (dry), N. Minckley, S. Minckley
> Bunting -> North Pond
> Hay Hollow -> N. Hay Hollow, S. Hay Hollow
>
> Mitigation and Hay Hollow have transducers measuring pressure that have been installed since 29 Nov 19. I have already passed this data along with water on/off dates.

Bunting and Twin have had malfunctioning transducers, but replaced with new ones today and pressure logs started.

All of our ponds have flow meters on them, but they are not all the same. Just to be clear, you want the same flow data Monty and I gathered for all of our wells? Is getting this flow data the first thing that needs to be done to get all of this going? I can start working on getting flow data this week while Monty is out, I just want to make sure that you need this information for all of our artesian wells. Is the plan to eventually put transducers on all the wells?

Thanks,
Cass

On Mon, Jan 6, 2020 at 5:02 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Hi All,
>
> I've been tasked with modelling how a change in artesian pressure affects the flow rate out of the wells.
>
> I believe there are four wells, Hay Hollow, Bunting, Mitigation, and Border. Please let me know if there are any other production wells.
>
> To create the model I need the following information for each production well that is used to fill the ponds. Monty has already sent me info for Hay Hollow.
>
> Valve size
> Valve type
> Pipe diameter
> Pipe material
> Pipe length
> Fittings
> Elevation where pressure is recorded
> Elevation of discharge point
> Pressure, both static (valve closed) and dynamic (valve open)
> Flow
>
> **Important Notes:**
>
> To do this model, we need to measure flow with only one discharge valve open and all of the other valves closed. Otherwise the math gets infinitely more complicated.
>
> We need to get flowmeters on the valves that we're measuring for flow ASAP. Ideally we would get flow meters that will record flow rates. I have a call into your vendor to see if we can retrofit your existing flowmeters to record data. New flowmeters should either have a built in datalogger or the ability to connect to an external datalogger.

Calibration: to make our model and data bulletproof we need to take secondary measurements as a double check. Keep doing the bucket measurements as a double check for flow data. Please record the date and time of each bucket measurement. We need to do the same for the artesian pressure data. I'm looking into a precision analog pressure gage that measures positive and negative pressures (more on that below).

Please leave the pressure transducers running, even when you open valves. I need both the static and dynamic pressure data.

Record the date and time when valves are opened and closed so I can correlate that to the pressure data.

Hay Hollow

The Hay Hollow well presents some extra challenges. Per my conversation with Monty, water levels reach the pressure transducer when the valves are closed. But when even one valve is opened, the pressure drops enough that water levels drop below the location that the transducer is installed. I'm not quite sure what to do about that yet, but I'm working on a couple of ideas.

From Monty's drawing of the plumbing, it appears that the 3" PVC pipe runs underground for a distance, then pops back up above ground. This creates a siphon effect and could give us negative pressure values. With the info Monty has given me, and the elevation data that Monty and Cass sent, I've built a preliminary curve for Hay Hollow, below. To read this graph, let's take the flow data Cass just sent me as an example. Flow was about 15 gpm, which is the X axis. At that flow rate, the pressure would be approximately -1.5 ft (Y axis).

We will refine and calibrate the model based on the field data collected through the transducer and flowmeter. Therein lies the rub, for this well, I can't calibrate pressure data when water level drops below the transducer when the valve is open.

Apologies for the long email.

Best,

Darrell

<image.png>
--

****
Darrell Kundargi
Hydrologist
Branch of Water Resources
U.S. Fish and Wildlife Service
500 Gold Street SW

Albuquerque, NM 87102

Ph: (505) 248-6430
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--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
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7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From: Tasha Harden
To: Walker, Cassondra
Subject: Re: lots of stuff
Date: Monday, December 23, 2019 10:30:13 AM

Don’t do 508 compliance- I think that’s what I did. And don’t stress over this stuff too much right now, enjoy your time off.

I’m at phd now and just looking at the flow I can tell you it’s not the normal flow rate.... that I remember prior to all this back when I was checking pond levels. I will talk with no ty and keep you in the loop on what we do- I think we will turn the pump on and or turn off bath house to keep phds going.

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

> On Dec 23, 2019, at 9:46 AM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> Next set of questions...
>
> I was able to get VPN access on my laptop and I am about to request Citrix access, but I don't know if I need to check the box about 508 compliance....
>
> I will check flow rates at Phd, but Phd 1 is low, but much higher...there is no inflow to Phd 2. I've been waiting for a day to sit down with Monty to do the new flow rate survey, but we haven't been here at the same time. I will definitely do graphs for those as well.
>
> If you have a minute can you scan and send me the data sheets from the laptop case...then I can get the whole year's worth of tape measurements and make graphs.
>
> I'm just about done making weekly data points for the three Hay Hollow monitoring wells, will be done this evening.
>
> I agree that I should salvage Phd2....do you just want me to take chub?
>
> On Mon, Dec 23, 2019 at 8:45 AM Tasha Harden <tasha_harden@fws.gov> wrote:
>> Haha... I know it gets a little hectic at times.
>>
>> Ok- so for the well data input into wiski. Just do all SB wells. Any well data

you pull off SB try to enter into there (so pressure and transducers)

As for Citrix access- I'm hoping you did that at the same time you requested Vpn? I have the email for your Vpn request and I will approve it this AM when I get to the office.

For the 4th grade weekly summary stuff- just a simple easy to understand paragraph should work- when you checked what, if you altered anything, and if there are any noteworthy items like: pond(s) level continue to drop, artesian flows decreasing at any ponds, or monitoring well data not following what we would expect to see, flood events, damage noticed, new water use form contractors... what you provided for the 20th is good- thank you! Monty is collecting flow data but I still want you to keep an eye on the data and graph it/analyze it please.

As for phd2- has there been a noticeable drop with the inflow? I didn't see a noticeable one when I was looking at Monty's data last week but we had that issue with Survey123 mismatching entries and locations- are you still going to redo the whole flow monitoring survey? We need to get that fixed soon- so if you don't have time let me know and I'll just do a whole new one that we can start using but I won't delete the old one until we for sure have all data off it. Instead of trying for shiner this week (if you were going to) you could salvage some fish from phd2 instead.

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

> On Dec 20, 2019, at 6:24 PM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> Ok, so many emails....so many questions:
>
> From Bill's email:
> 1. Region wants us to upload all well transducer data? Or just the pressure transducer data?
>
> 2. To upload this data by Monday, I need to request access (Citrix), but I cannot log in to myaccount from home since I don't have

access to PulseSecure yet. Can you log in for me and request this access?

3. I have been emailing Joaquin the transducer data every week...I haven't heard if he has been receiving it or not.

4. For the fourth grade summary, do I just send info to you to include in this? For my part I believe the info that I need to send to you are well and pond data (different from what I upload?....like a summary or graph?), any fish stuff, umbel stuff, transducer status etc...

For today (20 Dec 19) I have stuff to report:

1. I talked to Fred about the well and he said the well guy will be out after Christmas, but he won't do anything until Allen tells him too, so we definitely need to reach out to him.

2. Hay Hollow ponds were back up, so I turned off the water and started a new log.

3. The bunting well transducer is not working...it will not run a log so we need to get a new transducer out there. Since the transducer is crap, I turned the water back on to North until we get a new transducer. I think we might need to send the new transducers we got from Joaquin to get maintenance done and maybe rent a couple until they are ready to go...

4. Twin 2 is full again so we'll need to coordinate with Monty to get that turned down.

5.I emailed the transducer data from Hay Hollow, Bunting and Mitigation to Joaquin.

6. Phd 2 is super low (1.06) and I don't know why. Phd 1 is a bit better (1.35). We might start thinking about salvaging chub here.

7. I got three shiner out of Magoffin, so I'll keep doing that to pull out as many as possible.

8. Border Patrol had horses on the refuge today, I saw them at the cemetery but didn't talk to them.

9. I did not download monitoring well transducers since it is not the end of the month...but I have live readings and all transducers are working. Since they want weekly updates, I might change the code (if I can figure it out) to do the weekly graphs, that way I can download weekly and just add on to each graph and send it to you?

Sorry to bombard you with all of this info, but I wanted to make

sure that you got it and that I am on the right track...

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
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Cell: 520-368-6010
Fax: 520-364-2130

From: Harden, Tasha
To: Cassondra Walker
Subject: Re: lots of stuff
Date: Monday, December 23, 2019 1:36:17 PM

OK- I figured you probably already had. I'll let the hydro guys know.

On Mon, Dec 23, 2019 at 11:48 AM Cassondra Walker <cassondra_walker@fws.gov> wrote:

> I did test all the trolls and all of them are dead. They should be on my desk with notes attached to each one. There are two SBNWR trolls that I labeled separately, I need to get the one of Bunting.
>
> Cassondra Walker, PhD
> US Fish and Wildlife Service
> Refuge Biologist
> San Bernardino and Leslie Canyon NWR
>
> PO Box 3509
> 7628 N Hwy 191
> Douglas, AZ 85608
>
> Cell: 520-368-6010
>
> On Dec 23, 2019, at 11:40 AM, Tasha Harden <tasha_harden@fws.gov> wrote:
>
> > We turned bath house pump on so phds should recover and hopefully maintain.
> >
> > And I forgot earlier- As for the level trolls- please test all the ones from Joaquin- if none work I'll get with him to get new ones or loaners. Let me know.
> >
> > Thanks Cass!
> >
> > Tasha Harden
> > Assistant Manager
> > San Bernardino, Leslie Canyon NWRs
> > Douglas AZ
> > Office: 520-364-2104 x106
> > Cell: 520-368-6004
> >
> > > On Dec 23, 2019, at 9:46 AM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:
> > >
> > > Next set of questions...
> > >
> > > I was able to get VPN access on my laptop and I am about to

request Citrix access, but I don't know if I need to check the box about 508 compliance....

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I agree that I should salvage Phd2....do you just want me to take chub?

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Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

On Dec 20, 2019, at 6:24 PM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:

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Refuge Biologist
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Assistant Manager

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Fax: 520-364-2130

From: Juliette Fernandez
To: Baca, Joaquin; Bill Radke
Subject: Re: Model
Date: Thursday, November 7, 2019 12:32:01 PM

Based on new numbers is our request still 5 mi?

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

On Nov 7, 2019, at 12:06 PM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Juliette and Bill,
>
> attached is the final version of the updated drawdown analysis.
>
> On Wed, Nov 6, 2019 at 8:24 PM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:
>
> > Peter and Joaquin,
> > Thank you both for working on the new model to provide to DHS/Corps. I had a call with them today and they were inquiring about it. I know modeling takes time, but I wanted to check on the status. This is a VERY quickly paced issue and I want to make sure we have the opportunity to share our numbers ASAP.
> >
> > Thanks again!
> >
> > **Juliette Fernandez**
> > Refuge Supervisor AZ/NM
> >
> > 505-248-6650 Office
> > 505-933-3501 Cell
> > 505-248-6460 Fax
> >
> > U.S. Fish and Wildlife Service
> > P.O. Box 1306, Room 4112
> > Albuquerque, NM 87103-1306
> >
> > Region 2 Connects
>
> --
> Joaquin Baca
> Regional Hydrologist

US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

<Calculations DrawdownSBNWR_Addendum07Nov19.pdf>

From:	Baca, Joaquin
To:	Fernandez, Juliette; Bill Radke
Cc:	Burck, Peter; Steve Reagan
Subject:	Re: Model
Date:	Thursday, November 7, 2019 12:06:23 PM
Attachments:	Calculations DrawdownSBNWR_Addendum07Nov19.pdf

Juliette and Bill,

attached is the final version of the updated drawdown analysis.

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> Peter and Joaquin,
> Thank you both for working on the new model to provide to DHS/Corps. I had a call with them today and they were inquiring about it. I know modeling takes time, but I wanted to check on the status. This is a VERY quickly paced issue and I want to make sure we have the opportunity to share our numbers ASAP.
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> Thanks again!
>
> **Juliette Fernandez**
> Refuge Supervisor AZ/NM
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>
> Region 2 Connects

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Baca, Joaquin
To: Fernandez, Juliette
Cc: Burck, Peter; Steve Reagan
Subject: Re: Model
Date: Thursday, November 7, 2019 7:57:56 AM

Juliette,

we will have a product for you to look at this afternoon.

On Wed, Nov 6, 2019 at 8:24 PM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:

> Peter and Joaquin,
> Thank you both for working on the new model to provide to DHS/Corps. I had a call with them today and they were inquiring about it. I know modeling takes time, but I wanted to check on the status. This is a VERY quickly paced issue and I want to make sure we have the opportunity to share our numbers ASAP.
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> Thanks again!
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> **Juliette Fernandez**
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--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Baca, Joaquin
To: Juliette Fernandez
Cc: Bill Radke
Subject: Re: Model
Date: Thursday, November 7, 2019 12:43:19 PM
Attachments: Calculations DrawdownSBNWR_Addendum07Nov19.pdf

Typo corrections

On Thu, Nov 7, 2019 at 12:28 PM Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> I see some typos in the numbered section
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell
>
> On Nov 7, 2019, at 12:06 PM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> > Juliette and Bill,
> >
> > attached is the final version of the updated drawdown analysis.
> >
> > On Wed, Nov 6, 2019 at 8:24 PM Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:
> >
> > > Peter and Joaquin,
> > > Thank you both for working on the new model to provide to DHS/Corps. I had a call with them today and they were inquiring about it. I know modeling takes time, but I wanted to check on the status. This is a VERY quickly paced issue and I want to make sure we have the opportunity to share our numbers ASAP.
> > >
> > > Thanks again!
> > >
> > > **Juliette Fernandez**
> > > Refuge Supervisor AZ/NM
> > >
> > > 505-248-6650 Office
> > > 505-933-3501 Cell
> > > 505-248-6460 Fax
> > >
> > > U.S. Fish and Wildlife Service
> > > P.O. Box 1306, Room 4112
> > > Albuquerque, NM 87103-1306
> > >
> > > Region 2 Connects

--
Joaquin Baca
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<Calculations DrawdownSBNWR_Addendum07Nov19.pdf>

--
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From: Harden, Tasha
To: Bill Radke
Subject: Re: more info for meeting?
Date: Friday, November 22, 2019 10:27:20 AM

Monty says that ALL the solar pumps were on when he got here. I remember talking with Charles about how we should only be using artesian flow (it was one of those things he felt differently about and it appears he never turned off the pumps).
So as of right now- Monty will go turn off all the solar pumps today - He is really concerned, and I am too, about what will happen at Hackberry Well- Hackberry is where Monty has noticed no flow to some of the ponds during prolonged cloudy weather... meaning that we are struggling to keep 4 of the 5 ponds full even with using the pump. So I expect we will have to turn that one back on next week before people break for the Holiday. But I do want to document what our true artesian flows are without the pumps, so we're turning them off today and Monty will get readings next week. let me know if you have other ideas or approaches on this subject.

On Fri, Nov 22, 2019 at 9:59 AM Bill Radke <bill_radke@fws.gov> wrote:

> Tasha; Just to clarify, we have never actually had to operate the solar operated pump at the mitigation well ponds (or any ponds other than snail spring). Are we currently running that pump? That alone is a big game changer. We have never had problems keeping ponds full during winter months, when evaporation is reduced and trees are not transpiring, so that is a big change and a potential huge problem. Please let me know, Bill
>
> William R. Radke; Project Leader
> U.S.Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> Cell: 520 508-7180
>
> On Nov 22, 2019, at 8:22 AM, Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Also- MaGoffin pond is down a foot (Monty says that the pump doesn't run well during cloudy days and the flows get really low and even to no flow until the solar recharges which may cause it to drop- BUT I don't recall seeing anywhere that the refuge had issues with the hackberry ponds during any of the other falls/winters from the time they were established, other than when charles grubbed cattails in them)
> >
> > And- Monty found that someone has been messing with mitigation well and had turned on the water to yaqui pond. It wasn't on when I got picks for Jaoquin on the 12th.
> >
> > On Fri, Nov 22, 2019 at 8:10 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
> >
> > > Attached is an overall pic showing relation of the proposed wells
> > >
> > > And Cass pumped out a quick graph showing depth and pressure from one HH monitoring well- clearly the depth to water has been increasing over the years but it is extremely exaggerated this year, with a very large variation... the only changed variable is the recent huge increase in local water use.

> > --
> > Tasha Harden
> > Assistant Manager
> >
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> > 7628 N Hwy 191
> > Douglas AZ 85608
> > Office:520-364-2104 x106
> > Cell: 520-368-6004
> > Fax: 520-364-2130
>
> --
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Fax: 520-364-2130

From: Kundargi, Darrell
To: Walker, Cassondra
Cc: Baca, Joaquin; Harden, Tasha
Subject: Re: More water questions...
Date: Wednesday, January 8, 2020 2:30:36 PM
Attachments: mit_hour.png
image.png

Hi Cass,

Your email said a couple of questions, but you had four. I'll only answer two, lol.

To answer your questions in order:

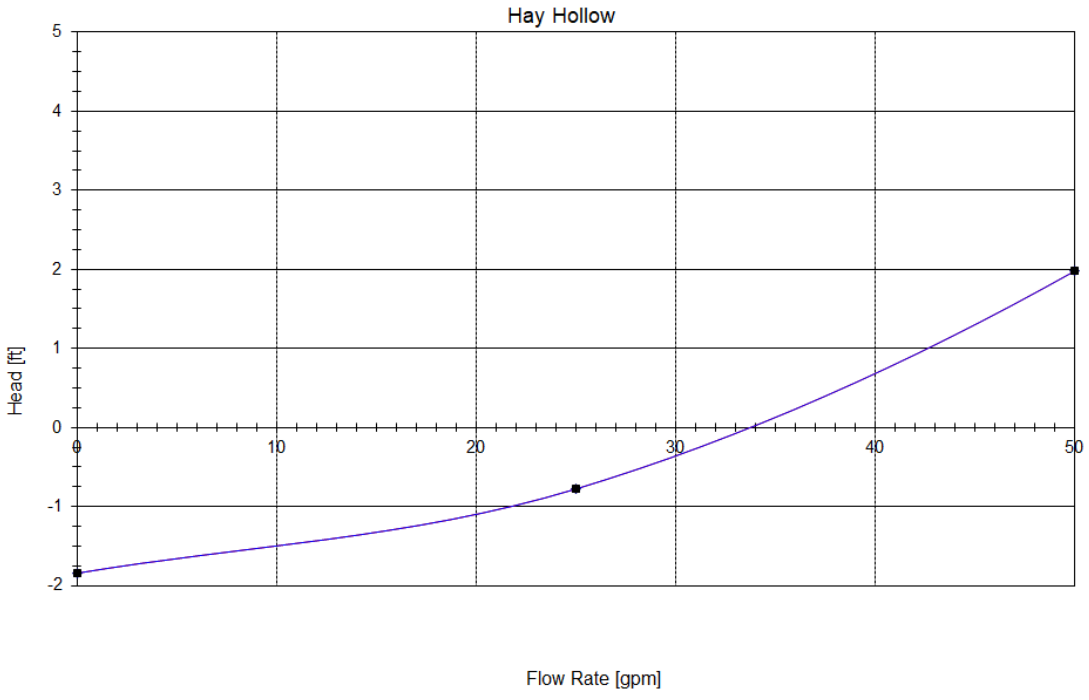
1) Send me the data for the time being. No other data is from the transducers is needed.

2) Yes, the bucket flow test is only for the wells we are monitoring (Hay Hollow, Mitigation, Twin, and Bunting). I'm going to buy a calibration bucket for you guys so you can get really accurate bucket readings.

3) Weekly for both

4) Weekly

5) I'll use Hay Hollow as an example. Significant change there is somewhere around 0.05. If you look at the graph below, flow rate is on the X axis, and pressure is on the Y axis. The measured flow rate is approx 15gpm, which corresponds to a pressure of approx -1.4 feet. If you lose 0.5 feet of pressure, you flow rate goes to zero. It may be different for Mitigation, I haven't modelled pressure vs. flow yet. I need the detailed plumbing specifications from Monty to do that.

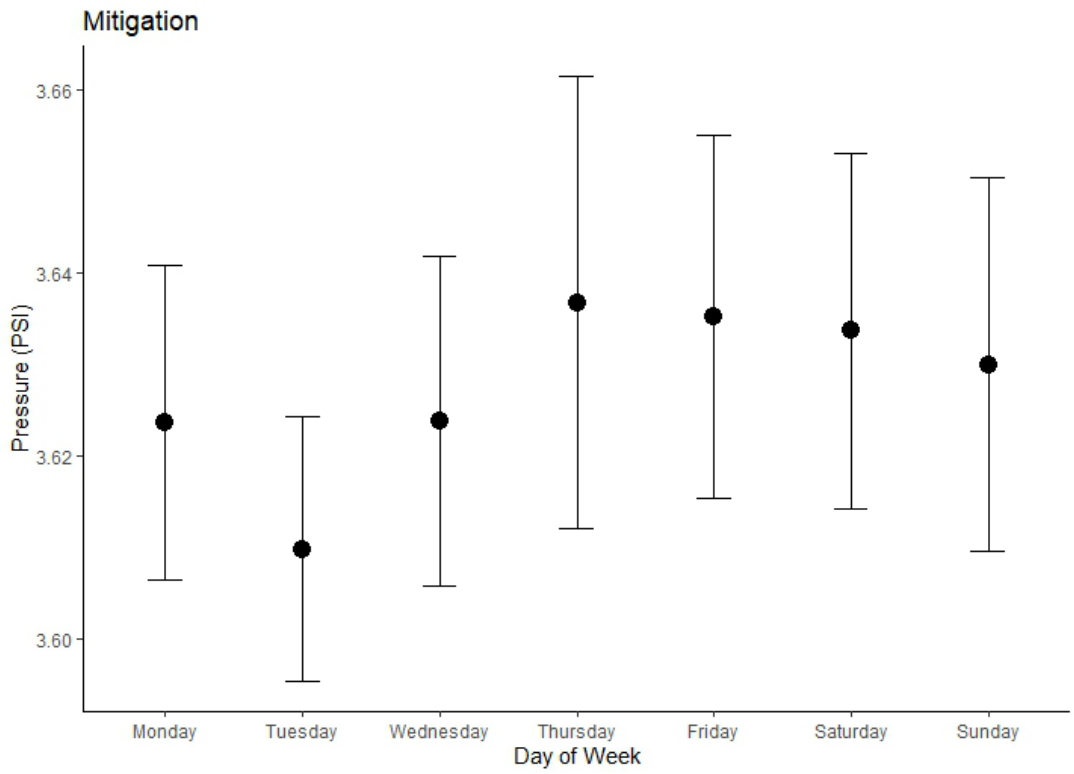


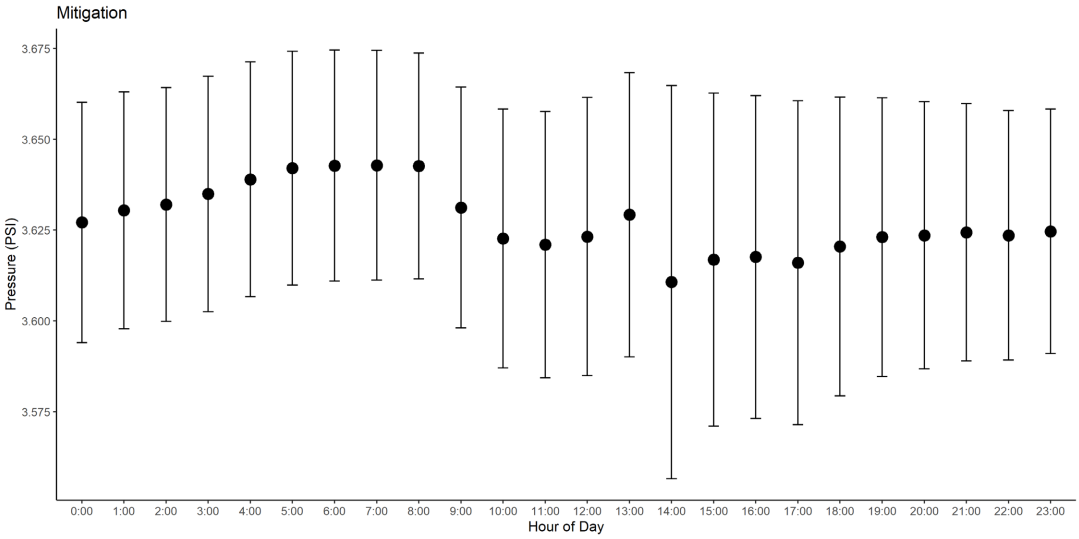
Best,

Darrell

On Wed, Jan 8, 2020 at 9:53 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Darrell,
>
> A couple more questions for you:
>
> 1. I've attached all of the transducer history through 31 Dec 19 for the three Hay Hollow Monitoring Wells: Hay Hollow Ponds (HHP), Hay Hollow Upstream (HHU), and Hay Hollow Downstream (HHD). I still have not been able to get access to the WISKI database and since the Macro needed to convert the data does not work for Pressure, I thought I would send it your way so that you could get started on it rather than wait for me. Is there anything else you need me to send?
>
> 2. The bucket flow test is only for the wells we are monitoring (Hay Hollow, Mitigation, Twin, and Bunting), is that correct?
>
> 3. The bucket flow data that we collect...is that to model the bias between the two measurements (bucket and flow meter) so that you can correct the flow meter readings for the model? Or are we collecting weekly bucket flow and meter readings indefinitely? I just want to make sure that I understand what data collection regimen is for the foreseeable future so I can adjust my schedule.
>
> 4. Do want me to email the weekly data from the well transducers (artesian pressure and monitoring wells)? Or would you prefer a different timetable (monthly)?
>
> 5. Tasha and I were looking over Mitigation pressure data at the daily and hourly level and were wondering if you had an idea as to what a "significant" change in pressure would look like? In the following graphs there is some interesting trends in pressure readings, but the differences are not very large (0.02 psi) so we were unsure how to interpret them. What are your thoughts?
>
> Graphs show daily and hourly means (29 Nov - 03 Jan) with 95% confidence intervals.





Thanks,
Cass

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Douglas AZ 85608

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From: Harden, Tasha
To: Kundargi, Darrell
Cc: Walker, Cassondra; Baca, Joaquin
Subject: Re: More water questions...
Date: Friday, January 10, 2020 1:06:08 PM

Thanks Darrell!
Cass and I were thinking along those lines but weren't sure. She said she will try to get videos of the bucket tests- its already a two person job to do the bucket test so she'll see what can be done for that...

I'm not sure if it's already been tossed around but do you have any intern(s) up there that would be willing to detail out here onsite or do detail rotations to SB? Would that be a practical useful option on your end to have someone here onsite strictly devoted to the water monitoring? Cass would still like to keep some of her monitoring but a detailer may really help out (This came to mind recently since Monty will be out for two weeks on a MATproject and he is usually the one to help Cass, and our LE guys is out during the same time for training, so we are down to a part time volunteer or myself trying to be available to help her out on bucket test days). We are not complaining at all- don't misunderstand, everyone here is more than willing to do what we can for all this- but sometimes we do get stretched thin, and we feel bad if we miss stuff. Just a thought- let me know what you think. We have a nice bunkhouse, onsite fuel, and a work station next to Cass that is set up to take a laptop.

On Wed, Jan 8, 2020 at 3:34 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Tasha,
>
> This is not a duh question at all. It probably seems redundant to get the bucket data, and I should have explained my reasoning from the beginning.
>
> The reason I want to get bucket readings is because I'm treating this data as if it's going to appear in court. We need our data to be bulletproof. If we end up in court and the opposing attorney asks how we know our flowmeter readings are accurate, the bucket readings gives us the ability to say that we have secondary data that backs up the flowmeters - we can say that the flowmeter is accurate within X% of our backup readings. It's the same reason I want to get NIST certified pressure gages to get secondary readings for the LT500s.
>
> To be honest, and I know this would be a pain, if we really wanted hardcore defensible data, we should take iPhone videos of the bucket test, making sure that the stopwatch and bucket are visible in the frame of the video. Then we could not be accused of fudging or fabricating data. I haven't brought that up yet because we're already asking a lot of you and the rest of the SBR staff. But it really is something we should do.
>
> The issue at SBR is the Division of Water Resource's top priority. I would be remiss in asking you and your team to collect data, only to have it shot down in court because I wasn't thorough in the data collection protocols.
>
> I hope this answers your question, and I appreciate all that your and the staff at SBR are doing.

Darrell

On Wed, Jan 8, 2020 at 2:51 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> Darrell sorry if this is a “duh” question but what is the reason to have flow meters AND to continue to take bucket readings? Are the flow meters still applicable in all this?
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> > On Jan 8, 2020, at 2:30 PM, Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:
> >
> > Hi Cass,
> >
> > Your email said a couple of questions, but you had four. I'll only answer two, lol.
> >
> > To answer your questions in order:
> >
> > 1) Send me the data for the time being. No other data is from the transducers is needed.
> >
> > 2) Yes, the bucket flow test is only for the wells we are monitoring (Hay Hollow, Mitigation, Twin, and Bunting). I'm going to buy a calibration bucket for you guys so you can get really accurate bucket readings.
> >
> > 3) Weekly for both
> >
> > 4) Weekly
> >
> > 5) I'll use Hay Hollow as an example. Significant change there is somewhere around 0.05. If you look at the graph below, flow rate is on the X axis, and pressure is on the Y axis. The measured flow rate is approx 15gpm, which corresponds to a pressure of approx -1.4 feet. If you lose 0.5 feet of pressure, you flow rate goes to zero. It may be different for Mitigation, I haven't modelled pressure vs. flow yet. I need the detailed plumbing specifications from Monty to do that.
> > <image.png>
> >
> > Best,
> >
> > Darrell

On Wed, Jan 8, 2020 at 9:53 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Darrell,
>
> A couple more questions for you:
>
> 1. I've attached all of the transducer history through 31 Dec 19 for the three Hay Hollow Monitoring Wells: Hay Hollow Ponds (HHP), Hay Hollow Upstream (HHU), and Hay Hollow Downstream (HHD). I still have not been able to get access to the WISKI database and since the Macro needed to convert the data does not work for Pressure, I thought I would send it your way so that you could get started on it rather than wait for me. Is there anything else you need me to send?
>
> 2. The bucket flow test is only for the wells we are monitoring (Hay Hollow, Mitigation, Twin, and Bunting), is that correct?
>
> 3. The bucket flow data that we collect...is that to model the bias between the two measurements (bucket and flow meter) so that you can correct the flow meter readings for the model? Or are we collecting weekly bucket flow and meter readings indefinitely? I just want to make sure that I understand what data collection regimen is for the foreseeable future so I can adjust my schedule.
>
> 4. Do want me to email the weekly data from the well transducers (artesian pressure and monitoring wells)? Or would you prefer a different timetable (monthly)?
>
> 5. Tasha and I were looking over Mitigation pressure data at the daily and hourly level and were wondering if you had an idea as to what a "significant" change in pressure would look like? In the following graphs there is some interesting trends in pressure readings, but the differences are not very large (0.02 psi) so we were unsure how to interpret them. What are your thoughts?
>
> Graphs show daily and hourly means (29 Nov - 03 Jan) with 95% confidence intervals.
> <Mit_Daily.jpeg>
>
> <mit_hour.png>
>
> Thanks,
> Cass
>
> --
> Cassondra Walker, PhD
> US Fish and Wildlife Service

Refuge Biologist
San Bernardino and Leslie Canyon NWR

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From: Radke, Bill
To: Tasha Harden
Subject: Re: Mormon house site
Date: Tuesday, October 8, 2019 9:26:53 AM

Tasha; I identified this issue to DHS. As federal laws are all waived for infrastructure construction, it is unknown if/how they will contend with the potential damage. Thanks, Bill

On Wed, Oct 2, 2019 at 9:38 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Hey Bill... as I drove by Mormon house site it made me wonder if the new fence will go right through it... was that ever brought up? Did that law also get waived for fence construction?
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Kundargi, Darrell
To: Tasha Harden
Cc: Bill Radke; Cassondra Walker
Subject: Re: New WISKI Logins
Date: Monday, December 23, 2019 10:54:47 AM

Until we can get you access to the database I can upload your data to WISKI.

Darrell

On Mon, Dec 23, 2019 at 9:11 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Bill- Monday(today) is not going to be possible. Cass is off (also I just approved her VPN but not that Citrix wiski database yet as she still needs to request it) and I also do not have access to that Citrix wiski database yet since I had to request it and I think you need to go into active directory and approve it.
>
> Cass will be back on the 26th. I won't be back to the office until the 30th. But I'll have my laptop and can approve her Citrix request once she is in and can request it.
>
> We did get Joaquin and Darrell access to our survey123 pond levels and flow readings- Just so they can see the raw data for those data sets as well, even though they can be highly influenced by our test and such... so we are making sure to annotate when we alter things that effect them.
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> On Dec 20, 2019, at 10:00 AM, Bill Radke <bill_radke@fws.gov> wrote:
>
> Hi; Region 2 considers the ongoing water withdrawal adjacent to SBNWR as being the current greatest threat to endangered species in the southwest region. They are dedicating a lot of resources toward monitoring and addressing the threats. Our data will be crucial in perfecting a federal reserved water right for the refuge.
>
> During a conference call yesterday, Region 2 wants us to directly load our water monitoring data into the water resources database as soon as possible (Monday if possible if any one is working that day). If so, please work with Darrell Kundargi on Monday to accomplish this. The objective is to weekly load up our monitoring data so a team of hydrologists can begin crunching the numbers to create deliverables to document the ongoing damage to our aquifer and to try and determine and depict the point at which such damage is essentially

permanent - can never be recharged.

We must be reaching our two week pressure transducer current condition baseline today or soon. It is important to get that data to Joaquin as soon as possible, and to begin releasing flow back into refuge wetlands. All water levels, flow meters, and wells must be consistently and carefully monitored and recorded, as we have been doing.

Juliette wants us to send her a weekly narrative that identifies "in fourth grade language," a basic summary of noteworthy conditions. Things like: Pressure transducers were removed after recording well pressures over the past two weeks, and water flow was resumed in those ponds. Twin-2 Pond went dry on December X. Slaughter Ranch began using their new domestic well on December X following installation of a flow meter to measure water use. Note any natural observations like: Dead fish were found in Black Draw on X. Flood event on X removed all refuge wetlands in Hay Hollow Wash by covering them with silt. Contractors treated Geronimo Trail Road with dust control chemical on January X. Refuge staff are coordinating with AGFD and Phoenix Zoo to conduct emergency salvage of San Bernardino springsnails threatened by water drawdowns. You get the idea.

Finally, please call Alan Finks and arrange installation of a flow meter and a pressure transducer and cable in their new well. It is the closest well to the Glenn Ranch Well and will be our best chance for monitoring impacts. He has previously offered this. I tried communicating with him earlier this week about monitoring without success. Region 2 is sending us the transducer and cable soon. The Slaughter Ranch well contractor could install the flow meter and just bill us directly. This will be crucial to any future legal action being discussed.

Please download and send Joaquin the two-month historic Hay Hollow Well transducer data you recently located.

I probably am forgetting something, but this covers most of what we were directed to do. Thank you for your help, Bill

William R. Radke; Project Leader
U.S.Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
Cell: 520 508-7180

Begin forwarded message:

From: "Kundargi, Darrell" <darrell_kundargi@fws.gov>

Date: December 19, 2019 at 4:20:08 PM MST
To: "Gracer, Tara" <tara_gracer@fws.gov>, Ricardo Estrada <ricardo_estrada@fws.gov>
Cc: "Harden, Tasha" <tasha_harden@fws.gov>, Cassondra Walker <cassondra_walker@fws.gov>, Bill Radke <Bill_Radke@fws.gov>, "Baca, Joaquin" <Joaquin_Baca@fws.gov>
Subject: New WISKI Logins

Hi Tara and Ric,

I'd like to get WISKI database access for two staff at San Bernadino National Wildlife Refuge. I've set them up with user profiles in WISKI.

Ric, can you please give them access to the WISKI server? Their AD logins are tasha_harden@fws.gov and cassondra_walker@fws.gov.

Tasha and Cassandra, to access the database you'll need to request Citrix access. Go to this site: https://myaccount-beta.fws.gov/index.cfm

Click on "Request Access"
<image.png>

Then click on "Citrix CloudDesktop"

<image.png>

Thanks!

Darrell

--

****
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From: Harden, Tasha
To: Baca, Joaquin
Cc: Kundargi, Darrell; Cassondra Walker; Burck, Peter
Subject: Re: Pressure/Flow Calcs
Date: Friday, January 3, 2020 2:12:52 PM
Attachments: image.png

Awesome- Thanks guys! I will keep Darrell in the loop on purchases and costs as we go! We'd like to RDS a few of the larger items already purchased so I'll get total costs on those too.

On Fri, Jan 3, 2020 at 1:36 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Hey Tasha,
>
> here is the cost code for water. Juliette gave the go ahead to share with you guys. Feel free to use as needed, just coordinate with Darrell and keep track of everything for our accounting. Im not sure what the ceiling is on this, but my understanding is you guys get what you need. I believe you can apply some of your past purchases to this as well.
>
> WBS: FXRS12610200000
> Fund: 201
> Cost Center: FF02R0W000
>
> On Thu, Jan 2, 2020 at 10:01 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Morning Darrell!
> >
> > Monty and Cass have kept me up to date with things and I understand we will be getting a detailed list, next week, of things we will need to do. They are already getting on some of the things you discussed with Monty.
> > As of this morning here is a list of some Insitu items we need in order to outfit our other water wells (4) for pressure readings, and to improve current conditions:
> >
> > - troll com 0651460 / DB9 connector
> > - Dessicant 0053550 (16)
> > - NPT adapter 0051470 (6-this includes a couple extra)
> > - rugged cable 0052000 (40 ft for slaughter ranch well)
> > - rugged cable 0052000 (8- shortest lengths possible, a foot would work, for the trolls on our water wells)
> >   - Ensure at time of order that it will work/connect with the level troll 500s and the wireless troll com
> >   - Also need to ensure that they come with the securing metal loop on the top end, or order some if they don't.
> >
> > If you need me to purchase some or all of these items with refuge funds just let me know! Thanks!
> >
> > On Fri, Dec 27, 2019 at 2:55 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

Hi All,

Per the last conference call, we need to establish a relationship between the pressure head and flow rate for the artesian wells. I can develop a theoretical relationship curve, but we'd need some real life data to calibrate the modelled curve. A theoretical curve would look something like the image below.

We need the following information for each well. Next to each item I've put down who needs to get that info, Refuge or Water.

Valve size (Refuge)
Valve type (Refuge)
Pipe diameter (Refuge)
Pipe material (Refuge)
Pipe length (Refuge)
Fittings (Refuge)
Elevation where pressure is recorded (Water)
Elevation of discharge (Water)

To calibrate the curve we need the following:

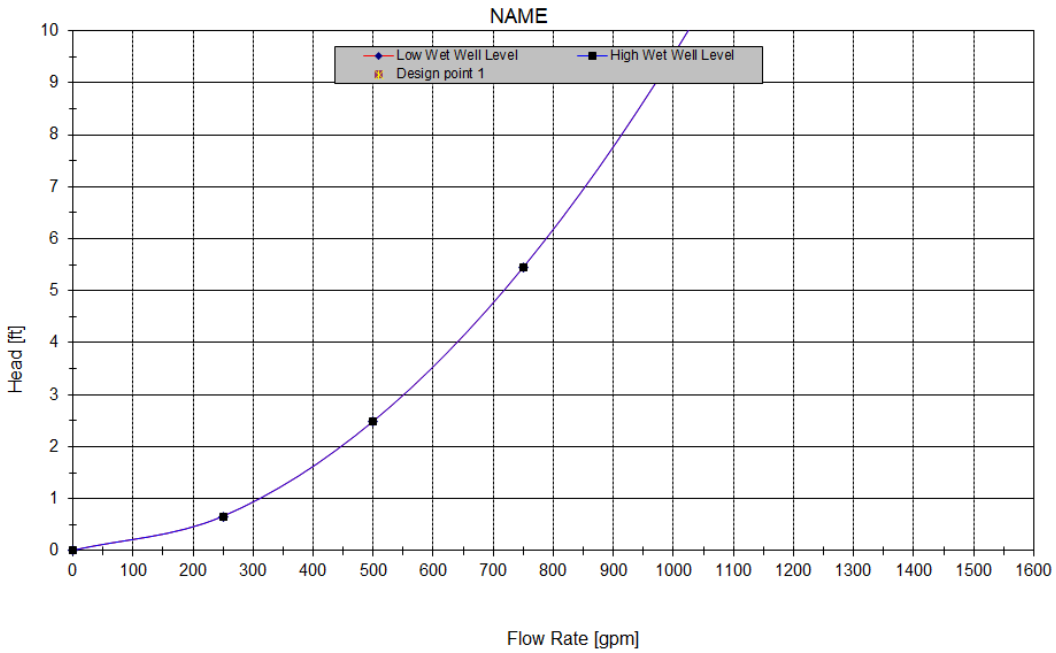
Pressure, both static and dynamic (Already being done)
Flow (Water and Refuge)

To collect flow data, we will need to install a flow meter. **I need the pipe diameter for each well ASAP** so I can order the correct flow meters. Can your maintenance staff install the flow meter for us? I can talk with your maintenance staff about installing the meter.

Once the flow meter is installed, I'll need to come down to hook it up to a solar panel and datalogger.

Thanks!

Darrell



--
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Tasha Harden
Assistant Manager

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--
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Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
Tasha Harden
Assistant Manager

San Bernardino & Leslie Canyon NWRs
PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104 x106
Cell: 520-368-6004
Fax: 520-364-2130

From: Baca, Joaquin
To: Harden, Tasha
Cc: Kundargi, Darrell; Cassondra Walker; Burck, Peter
Subject: Re: Pressure/Flow Calcs
Date: Friday, January 3, 2020 1:35:47 PM
Attachments: image.png

Hey Tasha,

here is the cost code for water. Juliette gave the go ahead to share with you guys. Feel free to use as needed, just coordinate with Darrell and keep track of everything for our accounting. Im not sure what the ceiling is on this, but my understanding is you guys get what you need. I believe you can apply some of your past purchases to this as well.

WBS: FXRS12610200000
Fund: 201
Cost Center: FF02R0W000

On Thu, Jan 2, 2020 at 10:01 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Morning Darrell!
>
> Monty and Cass have kept me up to date with things and I understand we will be getting a detailed list, next week, of things we will need to do. They are already getting on some of the things you discussed with Monty.
> As of this morning here is a list of some Insitu items we need in order to outfit our other water wells (4) for pressure readings, and to improve current conditions:
>
> - troll com 0651460 / DB9 connector
> - Dessicant 0053550 (16)
> - NPT adapter 0051470 (6-this includes a couple extra)
> - rugged cable 0052000 (40 ft for slaughter ranch well)
> - rugged cable 0052000 (8- shortest lengths possible, a foot would work, for the trolls on our water wells)
>   - Ensure at time of order that it will work/connect with the level troll 500s and the wireless troll com
>   - Also need to ensure that they come with the securing metal loop on the top end, or order some if they don't.
>
> If you need me to purchase some or all of these items with refuge funds just let me know!
> Thanks!
>
>
>
>
> On Fri, Dec 27, 2019 at 2:55 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:
>
> > Hi All,
> >
> > Per the last conference call, we need to establish a relationship between the pressure head and flow rate for the artesian wells. I can develop a theoretical relationship curve, but we'd need some real life data to calibrate the modelled curve. A theoretical curve would look

something like the image below.

We need the following information for each well. Next to each item I've put down who needs to get that info, Refuge or Water.

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Valve type (Refuge)
Pipe diameter (Refuge)
Pipe material (Refuge)
Pipe length (Refuge)
Fittings (Refuge)
Elevation where pressure is recorded (Water)
Elevation of discharge (Water)

To calibrate the curve we need the following:

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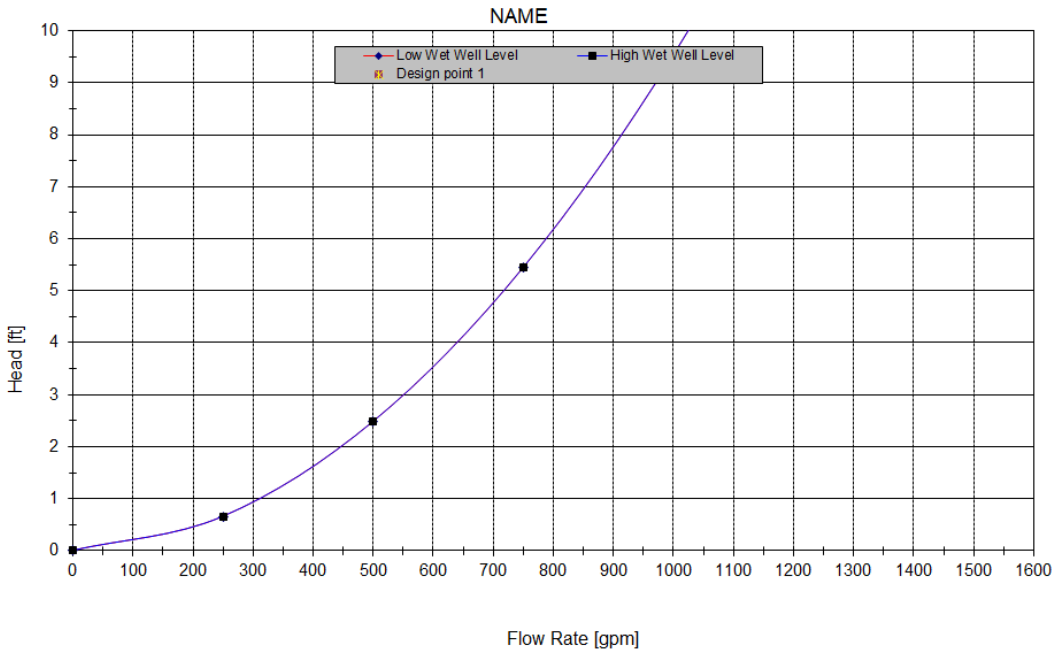
To collect flow data, we will need to install a flow meter. **I need the pipe diameter for each well ASAP** so I can order the correct flow meters. Can your maintenance staff install the flow meter for us? I can talk with your maintenance staff about installing the meter.

Once the flow meter is installed, I'll need to come down to hook it up to a solar panel and datalogger.

Thanks!

Darrell



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Darrell Kundargi
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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Walker, Cassondra
To: Harden, Tasha
Subject: Re: Pressure/Flow Calcs
Date: Saturday, January 4, 2020 11:01:22 AM
Attachments: image.png

As you order stuff, will you consider a longer mini solonist? The one Joaquin sent is 32 feet, but yesterday I could not get a reading at Spring Snail. When I looked back at what the AZ guys measured, they got a little over 32 feet, so I'm thinking the one I'm using isn't long enough. I found this one, looks like we can get 5% off..so might be a decent deal...

https://envirosupply.net/products/solinst-model-102m-mini-water-level-meter-80-feet-p10-or-p4?variant=14547449184291&gclid=EAIaIQobChMIp_S46MHq5gIVDdVkCh2DcwEjEAQYBCABEgKs-fD_BwE

On Fri, Jan 3, 2020 at 2:13 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Awesome- Thanks guys! I will keep Darrell in the loop on purchases and costs as we go! We'd like to RDS a few of the larger items already purchased so I'll get total costs on those too.
>
> On Fri, Jan 3, 2020 at 1:36 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> > Hey Tasha,
> >
> > here is the cost code for water. Juliette gave the go ahead to share with you guys. Feel free to use as needed, just coordinate with Darrell and keep track of everything for our accounting. Im not sure what the ceiling is on this, but my understanding is you guys get what you need. I believe you can apply some of your past purchases to this as well.
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> > > If you need me to purchase some or all of these items with refuge funds just let me know!
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On Fri, Dec 27, 2019 at 2:55 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

Hi All,

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Pressure, both static and dynamic (Already being done)
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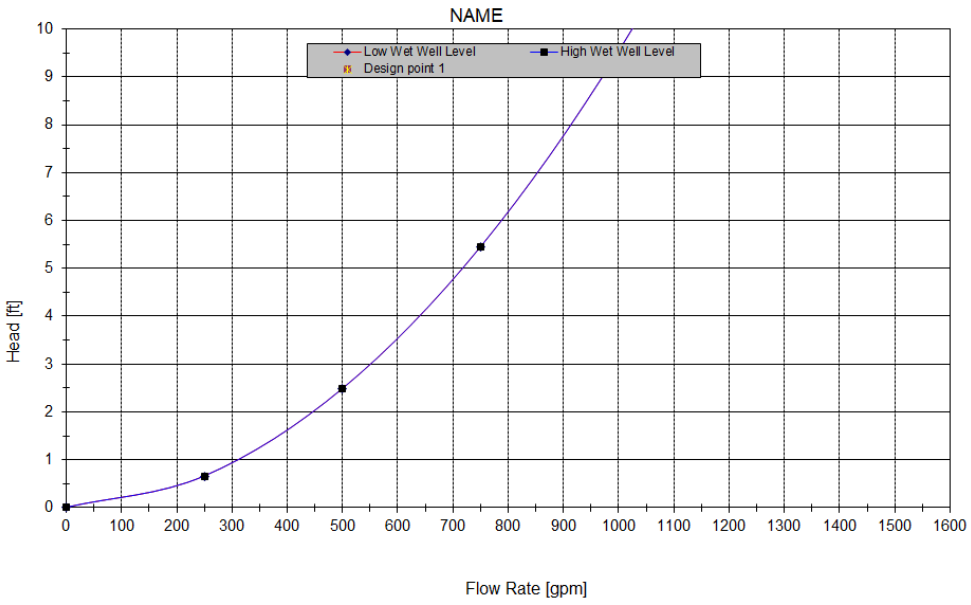
To collect flow data, we will need to install a flow meter. **I need the pipe diameter for each well ASAP** so I can order the correct flow meters. Can your maintenance staff install the flow meter for us? I can talk with your maintenance staff about installing the meter.

Once the flow meter is installed, I'll need to come down to hook it up to a solar panel and datalogger.

Thanks!

Darrell



--
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Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Douglas AZ 85608
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Cell: 520-368-6010
Fax: 520-364-2130

From:	Kundargi, Darrell
To:	Harden, Tasha
Cc:	Baca, Joaquin; Cassondra Walker; Monty Mcdaniel
Subject:	Re: questions
Date:	Friday, January 17, 2020 12:27:54 PM
Attachments:	SBR Well Retrofit.pdf

Hi Tasha,

Thank you for sending this email and summarizing the current status of things. I have a few changes to what you've captured. I've written it out in a step by step fashion because that's how my brain works.

Pressure Data
To calibrate the pressure vs. flow model, we need both the static (valve off) and dynamic (valve on) pressure data.

- Record the static pressure on the secondary gage during the whole study.
- We need to evaluate how accurate the LT500 sensors are measuring dynamic pressure.
- For the next three times we do a bucket test, take a reading on the secondary gage with the valve open.
- If the values from the LT500 and the secondary gage are within an acceptable range after three times, we can safely assume the LT500 is recording dynamic pressure accurately.

1) Connect to LevelTroll 500 (LT500) and download hourly well pressure data.
2) Record the real time, LT500 static pressure reading, and date/time of reading.
3) Setup LT500 to record on 1 minute intervals while we record flow.
4) Connect secondary pressure gage.
4) Record date/time and secondary static pressure reading.
5) Open valve.

Flow Data
- Only one valve should be opened during bucket tests.

1) Record date/time and flow rate from the flow meter.
2) Record date/time and elapsed time to fill 5 ga. bucket. Take concurrent video.
3) Repeat at least three times.
4) Record date/time and dynamic pressure from secondary gage.
5) Connect to LT500 and record date/time and dynamic pressure.
6) Download one minute LT 500 data.
5) Set LT500 to record on hourly intervals.
6) Close valve.
7) Go home and kick your feet up on the couch.

Work needed:

Retrofit all wells so we can attach secondary sensor. Retrofit Twin II and Hay Hollow so that LT500 is below water level when valves are open. I've attached a drawing of how I envision it.

All of the text above answers the first four bullets. To answer your other bullets:

- *All this data will be captured on the new survey123 form with the exception of the running transducer logs which will continue to be emailed to you/Joaquin/Cass*

Yes. I am working with our database vendor and IRTM to get you guys connected to our database so that SBR staff can upload transducer data to the database. I have automated things so that the CSV from VuSitu creates can be directly imported to the database without you having to format the file. Small win.

- *And in addition to this protocol, but still water related, we will still collect pond levels, flow meter readings, and well data on ALL ponds and wells on SBNWR each week.*

Yes. In the near future, I would like to connect Survey123 to our water resources database so that the data auto imports into the database for long term storage and retrieval.

We hope to be done by March. At that point we will need to evaluate whether we have the information we need to protect SBR's groundwater resources or if we need to keep going.

Lastly, I would like to reiterate that I am aware of the amount of work I am asking of all of you, and that I really appreciate your efforts.

Best,

Darrell

On Fri, Jan 17, 2020 at 10:14 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hey Darrell,
>
> I've been thinking and have some questions with the timeline for data collection as the methods have been changing... and since we won't be seeing you next week I'll hit you up now, LOL.
>
> To confirm: the latest plan/protocol for 4 wells is to conduct the following weekly:
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> To make sure I understand, This protocol will take place and data will be collected for a certain amount of time- and then some math can be done and some dots can be connected and this intense weekly protocol can stop? And we can go back to simple monitoring of just pond levels, flow meter readings, and well data? If so- Are you wanting to keep the transducers in the 4 wells and continue getting the logs emailed to everyone?
>
> I'm concerned with how this effort will mesh with our normal summer monitoring field season which starts in March and is full blown going in May.... Is it possible to have what we need from the intense protocol and be done with it by April? If not I'll need to get with Bill on staffing options....
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> Also, once summer evaporation kicks in I suspect that we may have to turn pumps back on for hay hollow well and bunting well- if we are still doing this intense protocol or even if we have stopped but the transducers are still in the wells- turning pumps on is going to mess with things.....
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> Sorry for the lengthy email and if I've repeated what has already been discussed between people, but with everyone spread out its the easiest way to communicate with you all at the same time!
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From: Kundargi, Darrell
To: Baca, Joaquin
Cc: Harden, Tasha; Cassondra Walker; Monty Mcdaniel; Hilola Adham
Subject: Re: questions
Date: Friday, January 17, 2020 1:57:57 PM

Hi All,

There's a field on the Survey 123 form, "valve on/off" that is designed to keep track of unit management.

Darrell

On Fri, Jan 17, 2020 at 1:55 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Tasha,
>
> To answer your questions,
> 1) per Randy (you are free to open the valves while collecting data so long as you annotate and note the times the valves are open and when they are closed. This way he can account for any changes in his analysis.
> 2) Please keep the transducers on the wells and continue to check spring snail for dtw (also if you can annotate if ss pump is running or not when you check).
> 3) I hate to say this, I wouldn't count on being done by March. We may need summer data as construction and road crews will need far more water as the temps increase. There is talk of sending you guys a detailee, thats a question to follow up with Bill.
>
> On Fri, Jan 17, 2020 at 1:01 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Thank you Darrell for the step by step- It helps me big time!
> >
> > So once we've collected enough data to calibrate the pressure vs. flow model, will we remove the transducers from the 4 wells? Just thinking again of if/when we need to turn pumps on to counter summer evaporation rates...
> >
> > Okay, it makes me feel a bit better that our goal is to have this big push done by March!
> >
> > Thanks again!
> >
> > On Fri, Jan 17, 2020 at 12:27 PM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:
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From: Broska, James
To: Bill Radke
Subject: Re: Quick turnaround question
Date: Thursday, November 14, 2019 11:25:48 AM

It would be best to discuss on phone.

On Thu, Nov 7, 2019 at 9:05 PM Bill Radke <bill_radke@fws.gov> wrote:

> James; This is a head pressure question, right? If a well wasn't capped and water was allowed to flow straight up out of the well, does that distance equate exactly to the head pressure, or is there some chart that calculates the given head pressure depending upon the diameter of the well or some other information? It seems like you taught me this at some point, and I have forgotten how to do the calculation. You have likely been away from SBNWR too long to remember head pressures at wells having artesian flows, and maybe that is crucial to answering this question. If this is obvious to you, please let me know where to go to find the answer to Juliette's question. Thanks, Radke
>
> William R. Radke; Project Leader
> U.S.Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> Cell: 520 508-7180
>
> Begin forwarded message:
>
> > **From:** Juliette Fernandez <juliette_fernandez@fws.gov>
> > **Date:** November 7, 2019 at 8:26:29 PM MST
> > **To:** Bill Radke <bill_radke@fws.gov>, joaquin_baca@fws.gov, Peter Burck <peter_burck@fws.gov>
> > **Subject: Re: Quick turnaround question**
> >
> > Sorry, doesn't look like the question made it. Here it is.
> >
> > "As this is not my area of expertise, would you be able to clarify at what point is the drawdown detrimentally impacting the well locations? It looks like 1.6 and 1.2 ft of drawdown is expected for Spring Snail well and Bunting well, respectively. For reference when I submit this to the team, what is the capacity for drawdown of each SBNWR well. I would like to best represent the severity of this potential. "
> >
> > Juliette Fernandez
> > Refuge Supervisor AZ/NM
> > 505-248-6650 Office
> > 505-933-3501 Cell

> On Nov 7, 2019, at 5:08 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:
>
> > Can you guys help me with a response to the below question ASAP?
> >
> > Thank you!
> >
> > Juliette Fernandez
> > Refuge Supervisor AZ/NM
> > 505-248-6650 Office
> > 505-933-3501 Cell

--
James Broska
Assistant Regional Director, Science Applications
(505) 248-6928 Office
(505)235-1614 Cell

From: Baca, Joaquin
To: Tasha Harden
Cc: Darrell Kundargi; Radke, Bill; Monty Mcdaniel; Cassondra Walker
Subject: Re: Quick turnaround question
Date: Tuesday, November 12, 2019 2:13:41 PM

thanks for getting these back to me so quickly.

On Tue, Nov 12, 2019 at 1:30 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> Hey Joaquin, here are pics of mitigation well and the north end of house pond where I believe the spring is that feeds into the pond.
> Mitigation well: Under the white pvc cap is another screw plug similar to the other wells (I didn't remove this one to see if it was open or sealed- I forgot). The psi gauge is like hay hollow well where it only registers the pumped flow not the artesian flow (Monty correct me if I'm wrong).
>
> I looked at spring snail again and even though it's hooked up to solar power it doesn't appear that the solar power is running... the green light for power out wasn't lit up...
>
> Bill- can you clarify/confirm some things: is spring snail well artesian? Is house pond filled via the seep/spring on the north end (pic attached)?
>
> Cass was it spring snail well that the state guys used their tape on and recorded it at 32? feet to water?
>
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Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

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--
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From: Walker, Cassondra
To: Tasha Harden
Cc: Baca, Joaquin; Darrell Kundargi; Radke, Bill; Monty Hedgpeth
Subject: Re: Quick turnaround question
Date: Tuesday, November 12, 2019 2:03:56 PM

Yes, when the state guys were out we measured 32 feet to water at Snail Spring Well.

Cass

On Tue, Nov 12, 2019 at 1:30 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> Hey Joaquin, here are pics of mitigation well and the north end of house pond where I believe the spring is that feeds into the pond.
> Mitigation well: Under the white pvc cap is another screw plug similar to the other wells (I didn't remove this one to see if it was open or sealed- I forgot). The psi gauge is like hay hollow well where it only registers the pumped flow not the artesian flow (Monty correct me if I'm wrong).
>
> I looked at spring snail again and even though it's hooked up to solar power it doesn't appear that the solar power is running... the green light for power out wasn't lit up...
>
> Bill- can you clarify/confirm some things: is spring snail well artesian? Is house pond filled via the seep/spring on the north end (pic attached)?
>
> Cass was it spring snail well that the state guys used their tape on and recorded it at 32? feet to water?
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Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From: Baca, Joaquin
To: Fernandez, Juliette
Subject: Re: Quick turnaround question
Date: Tuesday, November 12, 2019 6:31:38 AM
Importance: High

Morning Juliette,

We have been planning on going out there the first week of December. I dont think we can pull off a test in the next week or so. Everyone in our shop is out of office for the next quite a bit for the next of couple weeks. I am availble to discuss.

Thank you.

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From: Reagan, Steve
To: Fernandez, Juliette
Subject: Re: Quick turnaround question
Date: Friday, November 8, 2019 9:12:50 PM
Importance: High

I talked to Joaquin the other day and both of us agreed this is a priority. Please ask him for what you need.

Steve

Sent from my iPhone

On Nov 8, 2019, at 4:25 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> Steve,
> What it be possible to ask Joaquin to do a head pressure survey at San Bernardino? I think it would be really helpful. It would have to be done really soon.
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell
>
> Begin forwarded message:
>
> **From:** "Baca, Joaquin" <joaquin_baca@fws.gov>
> **Date:** November 8, 2019 at 8:38:52 AM MST
> **To:** Juliette Fernandez <juliette_fernandez@fws.gov>
> **Cc:** Bill Radke <bill_radke@fws.gov>, Peter Burck <peter_burck@fws.gov>
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<mime-attachment.html>

<PressureHead.pptx>

From:	Broska, James
To:	Bill Radke
Cc:	Juliette Fernandez; Baca, Joaquin; Peter Burck
Subject:	Re: Quick turnaround question
Date:	Tuesday, November 19, 2019 8:53:49 AM
Attachments:	Flow Estimates from Horizontal Pipe.pdf Flow Estimates from Vertical Pipe.pdf

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Bill,

Great talking with you this morning. As we discussed, here are some diagrams to help estimate discharge from flowing wells.

On Fri, Nov 8, 2019 at 8:04 AM Bill Radke <bill_radke@fws.gov> wrote:

> Juliette; I think this is a fairly basic hydrology question, but I am not a hydrologist. I have reached out to others with this question but have not received an answer. Here is how I would explain the issue:
>
> The San Bernardino Valley is a basin, and the groundwater aquifer under the valley has a relatively static flat level. Wells tapped into the aquifer allow water to flow upward under pressure (following the path of least resistance) and that situation currently produces artesian (as opposed to pumped) flow into springs and ponds on the refuge and at Slaughter Ranch. The volume of that flow can be measured as "head pressure," and the exact head pressure of various wells will differ depending upon the diameter of the specific well casing, where the top of the well is located within the valley, and other variables. Typically a greater head pressure occurs in the center - lowest point - of the valley, and a lower head pressure occurs at the edges - highest point - of the valley. Snail Spring well and Hay Hollow well both support endangered species on the edge of the valley and therefore have some of the lowest head pressures, lower than the projected drops in head pressure resulting from border infrastructure construction water withdrawal as consistently described in the Technical Report. These wells will be the first wells impacted by groundwater withdrawal, and are projected to fail, based upon the Technical Report. Already, flows have decreased at these two wells to the point that the low flows can no longer be measured with a flow meter. The head pressure in all other refuge wells will also diminish, and while they may not stop flowing completely, the flows will be diminished to the point that flow will no longer support a pond (flow into the pond cannot keep up with water evaporation and/or water infiltration), water quality will diminish, and dependent aquatic species will die. The exact head pressures of refuge wells can be measured and calculated by a hydrologist like Joaquin. The bottom line is that if head pressure in the basin is decreased by some amount (1.5 feet for example), that same head pressure is removed from all refuge wells currently having artesian flow. I hope this basic explanation is helpful, and I know a hydrologist could explain this better. Thank you, Bill Radke
>
> William R. Radke; Project Leader
> U.S.Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> Cell: 520 508-7180
>
> On Nov 7, 2019, at 8:26 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

Sorry, doesn't look like the question made it. Here it is.

"As this is not my area of expertise, would you be able to clarify at what point is the drawdown detrimentally impacting the well locations? It looks like 1.6 and 1.2 ft of drawdown is expected for Spring Snail well and Bunting well, respectively. For reference when I submit this to the team, what is the capacity for drawdown of each SBNWR well. I would like to best represent the severity of this potential. "

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

On Nov 7, 2019, at 5:08 PM, Juliette Fernandez <juliette_fernandez@fws.gov> wrote:

> Can you guys help me with a response to the below question ASAP?
>
> Thank you!
>
> Juliette Fernandez
> Refuge Supervisor AZ/NM
> 505-248-6650 Office
> 505-933-3501 Cell

--
James Broska
Assistant Regional Director, Science Applications
(505) 248-6928 Office
(505)235-1614 Cell

From: Fernandez, Juliette
To: Bill Radke
Subject: Re: requested info
Date: Monday, November 25, 2019 5:16:19 PM
Attachments: Aquifer.docx

Hi Bill,
You touched on a number of issues you are seeing on the call. i.e. drops in water, erratic changes, moving fish etc. I tried to capture them. Will you add/adjust verbiage? Also, you talked about having the 5 mi buffer helping us to have time to adjust. Will you add something about that? I would like to provide one consolidated document that is just facts in layman's terms so that it gets to all of the appropriate parties and can further help their conversations. Call me tomorrow if you have questions.

Thanks,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Fri, Nov 22, 2019 at 3:04 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Emily,
> Bill asked if I would provide you with some of our rough monitoring data asap. Attached are a couple documents that I could quickly pull together for you. Also, our biologist Cassondra will reply to all of us today with a map of the wells that she monitors on SBNWR.
>
> Thank you and let me know if you have any questions.
>
> --
> Tasha Harden
> Assistant Manager
>
> San Bernardino & Leslie Canyon NWRs
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104 x106
> Cell: 520-368-6004
> Fax: 520-364-2130

From: Fernandez, Juliette
To: Harden, Tasha
Cc: Cassondra Walker; Bill Radke
Subject: Re: requested info
Date: Monday, November 25, 2019 10:26:42 AM

Thanks all, for future requests, please send information through me so I can consolidate and they have one POC should they have any questions. I'll work closely with you to make sure we are getting them what they need to know.

Thanks again,

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Fri, Nov 22, 2019 at 3:04 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Emily,
> Bill asked if I would provide you with some of our rough monitoring data asap. Attached are a couple documents that I could quickly pull together for you. Also, our biologist Cassondra will reply to all of us today with a map of the wells that she monitors on SBNWR.
>
> Thank you and let me know if you have any questions.
>
> --
> Tasha Harden
> Assistant Manager
>
> San Bernardino & Leslie Canyon NWRs
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104 x106
> Cell: 520-368-6004
> Fax: 520-364-2130

From:	Walker, Cassondra
To:	Harden, Tasha
Cc:	Emily.A.Lester@usace.army.mil; Bill Radke; Fernandez, Juliette
Subject:	Re: requested info
Date:	Friday, November 22, 2019 3:06:57 PM
Attachments:	SanB_Wells and Ponds.pdf

Hi Emily,

Here is a map depicting the pond and monitoring well locations for San Bernardino.

Thank you,
Cassondra

On Fri, Nov 22, 2019 at 3:04 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Emily,
> Bill asked if I would provide you with some of our rough monitoring data asap. Attached are a couple documents that I could quickly pull together for you. Also, our biologist Cassondra will reply to all of us today with a map of the wells that she monitors on SBNWR.
>
> Thank you and let me know if you have any questions.
>
> --
> Tasha Harden
> Assistant Manager
>
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--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From: Fernandez, Juliette
To: Bill Radke
Subject: Re: requested info
Date: Tuesday, November 26, 2019 8:04:43 AM

Got it. Thank you

Juliette Fernandez
Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Tue, Nov 26, 2019 at 8:01 AM Bill Radke <bill_radke@fws.gov> wrote:

> Juliette; Your verbiage captures all the important points. I have nothing to add. Under the hydrology heading, there is mention of Quitobaquito, and while the information is accurate, it perpetuates the idea that Quitobaquito is more important than SBNWR, rather than being of equal value. Thank you for doing this for us. Bill
>
> William R. Radke; Project Leader
> U.S.Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> Cell: 520 508-7180
>
> On Nov 25, 2019, at 5:16 PM, Fernandez, Juliette <juliette_fernandez@fws.gov> wrote:
>
> > Hi Bill,
> > You touched on a number of issues you are seeing on the call. i.e. drops in water, erratic changes, moving fish etc. I tried to capture them. Will you add/adjust verbiage? Also, you talked about having the 5 mi buffer helping us to have time to adjust. Will you add something about that? I would like to provide one consolidated document that is just facts in layman's terms so that it gets to all of the appropriate parties and can further help their conversations. Call me tomorrow if you have questions.
> >
> > Thanks,
> >
> > **Juliette Fernandez**
> > Refuge Supervisor AZ/NM

505-248-6650 Office
505-933-3501 Cell
505-248-6460 Fax

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P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Fri, Nov 22, 2019 at 3:04 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Hi Emily,
> Bill asked if I would provide you with some of our rough monitoring data asap. Attached are a couple documents that I could quickly pull together for you. Also, our biologist Cassondra will reply to all of us today with a map of the wells that she monitors on SBNWR.
>
> Thank you and let me know if you have any questions.
>
> --
> Tasha Harden
> Assistant Manager
>
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> Cell: 520-368-6004
> Fax: 520-364-2130

<Aquifer.docx>

From: Broska, James
To: Radke, Bill
Subject: Re: San B data and docs
Date: Wednesday, November 20, 2019 11:17:49 AM

Good! I told Joaquin he needed to buy you a few mini-Trolls!

On Wed, Nov 20, 2019 at 10:58 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi James; After speaking with you, we figured out a way to plumb the Hay Hollow well for a pressure transducer. We are ready to go. Thanks for your help yesterday. Radke
>
> On Wed, Nov 20, 2019 at 7:58 AM Broska, James <james_broska@fws.gov> wrote:
>
> > Bill, Joaquin,
> >
> > I have copied all the files I have from my days working on San B to a hard drive for Joaquin. I am sending this email because I think it would be a good idea if Joaquin brought the Hard Drive to San B when he visits next month and then copy all the files to Bill's computer or a separate hard drive. That way, the data will be directly available to BIll at anytime..
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

--
James Broska
Assistant Regional Director, Science Applications
(505) 248-6928 Office
(505)235-1614 Cell

From: Walker, Cassondra
To: Tasha Harden
Cc: MacMillan, Ariel
Subject: Re: San Bernardino File
Date: Sunday, December 29, 2019 1:32:30 PM

I do have most of the 55 numbers for our wells. The only one I still need to track down is the Hackberry well with the solar power. I need to check our records again.

Well	
Leslie Canyon South	55-5203422
Leslie Canyon Middle	55-203421
Leslie Canyon North	55-203420
Leslie Canyon Road	55-203419
Leslie Canyon Upstream	55-589794
Hay Hollow Ponds	55-212321
Hay Hollow Upstream	55-212326
Hay Hollow Downstream	55-212327
Black Draw South	55-546490
Black Draw North	55-546493
Black Draw East	55-546492
Frog	55-55204
Cemetery North	55-55202
Cemetery South	55-55203
Hay Hollow	55-200769
Bunting	55-627162
Oasis	55-530754
Twin	55-537172
Hackberry	
Robertson	55-627159
Bath House	55-627160
Mitigation	55-221026
Snail Spring	55-221027

On Fri, Dec 20, 2019 at 5:30 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Hi Ariel- I will send you what I have, it's an email from Cass on Nov25. There were still two 55#s that needed figuring out- and Cass did but I don't remember the outcome... Cass is there anything else you can share with Ariel? A map or document with the completed info?
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004

On Dec 19, 2019, at 4:03 PM, MacMillan, Ariel <ariel_macmillan@fws.gov> wrote:

Tasha,

I hope you are doing well. I have a quick question for you regarding San Bernardino information. I am trying to make a map that correlates with water rights. Most of the documents submitted to the state of AZ for necessary records have things written on them like, "Well #1" and "Well #2." These documents generally also have a Cadastral # or Registry #, and the location by township. However, they do not have the names that we call them, like "Bunting Well" or "Oasis Well". I am using what I have to try to solve this puzzle. I am curious if you already have a resource at the refuge, that has this done? (Cadastral#/Registry# associated somehow with what we have named the wells.)

Thank you for any information you can provide,

Ariel MacMillan-Sanchez
Legal Intern
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Telephone: (505) 248-6834

On Fri, Dec 6, 2019 at 2:56 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> ok- I'll see what we can pull together and send back with Joaquin on a thumb drive!
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> > On Dec 6, 2019, at 1:31 PM, MacMillan, Ariel <ariel_macmillan@fws.gov> wrote:
> >
> > Tasha,
> >
> > I am specifically looking for files related to water rights. I've downloaded the files available from AZ Wells 55 Online, but this is about all I have.

Ariel MacMillan-Sanchez
Legal Intern
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Telephone: (505) 248-6834

On Fri, Dec 6, 2019 at 1:23 PM Tasha Harden <tasha_harden@fws.gov> wrote:

> Hi Ariel, what type of info are you looking for?
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> > On Dec 6, 2019, at 12:17 PM, MacMillan, Ariel <ariel_macmillan@fws.gov> wrote:
> >
> >
> > Good afternoon Tasha,
> >
> > I am working on the San Bernardino File here in Albuquerque and was curious if you all have a nice digital file. Our files here are a bit sparse for the Refuge. If you are able to share your file with me that would be great. If it is too big to send over email or Google Drive, perhaps Joaquin could get it on a flash drive while he is out there next week? Let me know what you think.
> >
> > Looking forward to hearing from you,
> >
> > Ariel MacMillan-Sanchez
> > Legal Intern
> > US Fish & Wildlife Service
> > National Wildlife Refuge System
> > Division of Water Resources
> > Telephone: (505) 248-6834

--
Cassondra Walker, PhD
US Fish and Wildlife Service

Refuge Biologist
San Bernardino and Leslie Canyon NWR

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Douglas AZ 85608
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Fax: 520-364-2130

From: Peter Burck
To: Baca, Joaquin
Subject: Re: San Bernardino NWR - Available of Well Record for Glenn Well?
Date: Tuesday, January 21, 2020 7:21:46 AM

Hi Joaquin,

Thank you.

Peter

Sent from my iPhone

On Jan 21, 2020, at 6:52 AM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Hey Peter,
>
> we have records of the well. Ariel has it in her office and i believe she is keeping electronic files on her intern drive
>
> On Mon, Jan 20, 2020 at 4:48 PM Burck, Peter <peter_burck@fws.gov> wrote:
>> Hi Joaquin,
>>
>> Do we have a copy of the Glenn Well well record? Or is that pending? Please let me know if I should reach out to Bill Radke or his staff to obtain a copy. Thank you.
>>
>> Peter
>>
>> --
>> Peter Burck
>> Hydrologist
>> US Fish & Wildlife Service
>> National Wildlife Refuge System
>> Division of Water Resources
>> Physical Address:
>> 500 Gold Avenue SW
>> Albuquerque, NM 87102
>> Mailing Address:
>> PO Box 1306
>> Albuquerque, NM 87103-1306
>> (505) 248-7961 (Office)
>
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549

www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Baca, Joaquin
To: Burck, Peter
Subject: Re: San Bernardino NWR - Continuous Pumping vs Pumping Schedule and Jacob Assumptions
Date: Wednesday, November 20, 2019 9:55:12 AM

Hey Peter,

Thank you, I really appreciate your support on this project.

On Wed, Nov 20, 2019 at 9:39 AM Burck, Peter <peter_burck@fws.gov> wrote:

> Hi Joaquin,
>
> As we discussed this morning, here is what I found on two topics related to the San Bernardino project.
>
> **Topic 1: Continuous Pumping vs. Pumping Schedule**
>
> I converted a continuous (24 hours per day, 7 days per week) pumping rate of 21 gallons per hour to an equivalent of 70.56 gallons per hour assuming the well is pumped 10 hours per day, 5 days per week.
>
> The formula I used (which can be applied in a similar manner to other pumping schedules or scenarios) is:
>
> 21 gallons per hour * (24 hours/day / 10 hours/day) * (7 days/week / 5 days/week) = **70.56 gallons per day**
>
> I've verified the calculation in the attached spreadsheet. Please let me know if you have questions or would like other pumping rates converted.
>
> **Topic 2: Jacob Solution Assumptions**
>
> Here are the Jacob solution assumptions from the Aqtesolv website. A pdf version of the full page is attached.
>
> - aquifer has infinite areal extent
> - aquifer is homogeneous, isotropic and of uniform thickness
> - control well is fully penetrating
> - flow to control well is horizontal
> - aquifer is nonleaky confined
> - flow is unsteady
> - water is released instantaneously from storage with decline of hydraulic head
> - diameter of a pumping well is very small so that storage in the well can be neglected
> - values of u are small (i.e., r is small and t is large)
>
> Please let me know if you have questions. Thank you.
>
> Peter
>
> --
> Peter Burck
> Hydrologist
> US Fish & Wildlife Service
> National Wildlife Refuge System
> Division of Water Resources
> Physical Address:
> 500 Gold Avenue SW
> Albuquerque, NM 87102
> Mailing Address:

PO Box 1306
Albuquerque, NM 87103-1306
(505) 248-7961 (Office)

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Baca, Joaquin
To: Radke, Bill
Cc: Juliette Fernandez
Subject: Re: San Bernardino NWR Hydrology Information
Date: Wednesday, August 21, 2019 7:37:09 AM

Hey Bill,

did you mean to include the attachements? Nothing seems to have come through.

Thanks

On Wed, Aug 21, 2019 at 7:35 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Joaquin; FYI - I am forwarding you this email that I sent a couple years ago to the owner of the Slaughter Ranch, located adjacent to SBNWR. FWS has a conservation easement on the property. A lot (all?) of the information I sent him is somewhat pertinent to our current DHS threat. Thanks, Bill Radke
>
> ---------- Forwarded message ---------
> From: **Alan Finks** <(b) (6) >
> Date: Thu, Dec 14, 2017 at 3:25 PM
> Subject: Re: San Bernardino NWR Hydrology Information
> To: Radke, Bill <bill_radke@fws.gov>
>
> Bill,
>
> Thank you so much, sir.
>
> I look forward to reading them.
>
> Merry Christmas to you and to all of your staff.
>
> Alan Finks
>
> On Wed, Dec 13, 2017 at 10:45 AM, Radke, Bill <bill_radke@fws.gov> wrote:
>
> > Hi Allan; Attached to this email is my letter and five accompanying hydrology reports/abstracts per your request. I will also mail you paper copies of all this same information today. I hope it is useful to you, and please contact me if you have any questions about this that I might be able to help answer. As we continue to make progress on our project, we will continue to monitor area wetlands to document any changes that might occur. If you ever observe any detriments to your property that may be a result of any of our work on the adjacent national wildlife refuge, please notify me immediately so we can work together to address the issue. Thank you, Bill Radke
> >
> > --
> > William R. Radke; Project Leader
> > U.S. Fish and Wildlife Service
> > Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> > P.O. Box 3509
> > Douglas, AZ 85608

> Cell: (520) 508-7180

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

From: Juliette Fernandez
To: Radke, Bill
Cc: Steve Reagan; Joaquin Baca
Subject: Re: San Bernardino NWR Periodic Hydrologic Monitoring Update
Date: Wednesday, January 1, 2020 9:23:37 AM

Received. Thanks Bill.

Juliette Fernandez
Refuge Supervisor AZ/NM
505-248-6650 Office
505-933-3501 Cell

On Dec 30, 2019, at 12:07 PM, Radke, Bill <bill_radke@fws.gov> wrote:

> Juliette and Steve;
>
> In order to collect a "baseline" condition of selected artesian wells on the refuge, it was necessary to temporarily turn valves off at the Twin Ponds, the Hay Hollow Ponds, North Pond, and Mitigation Pond. The goal was to obtain two weeks worth of "baseline" data from these wells, to compare against in determining the impacts of large scale water withdrawal by DHS contractors.
>
> During the week of Dec 2, 2019, water was turned off to the two Hay Hollow Ponds and to North Pond, and pressure transducers were installed and programmed to begin logging. Mitigation Well was previously turned off (water used to fill and maintain Yaqui Pond was stopped and put on hold), and a pressure transducer was installed and began logging at that location on November 29, 2019.
>
> On Dec 10, 2019, Twin well was turned off, stopping flow to Twin1 and Twin 2 Ponds, and a pressure transducer was installed and began logging. Turning off water to these ponds to collect baseline information resulted in the rapid failure of Twin-2 Pond, which was almost empty by Dec. 12, 2019.
>
> On Dec 12, 2019, water was turned back on to maintain Twin 1 Pond, but Twin 2 Pond had already dropped to a dangerous level, and all existing fish in this pond perished. North Pond level measured 1.18 on the staff gauge, and refuge staff will turn water inflow back on after the week of the 20th, once a full two weeks of pressure data has been collected.
>
> During the week of Dec 20, 2019,
>
> - Water to the two Hay Hollow Ponds was turned back on (Dec 16, 2019) since pond levels had dropped 0.5 ft. The pressure transducer was left in place in case pond levels rise high enough to run another pressure test.

- Flow levels were documented; artesian flows appeared fairly consistent.
- Pond levels and ground water well readings will be collected on Dec 20, 2019.
- The Glenn's Hay Hollow Windmill Well on private land adjacent to the NE corner of the refuge was not being utilized when checked on Dec 19, 2019, the hose was not hooked up to it, and was just laid out towards Geronimo Trail Road and ending east of the Glenn Ranch corrals.
- Refuge costs associated with purchasing monitoring equipment is over $10,000.00. U
- Assistant Manager T. Harden had a conference call on Dec 20, 2019 with Rod Dossey (project environmental specialist contractor) in regards to temporary Black Draw crossing on the border road being repaired. Prior to working on the crossing, contract biologists salvaged endangered fish at the crossing and relocated them upstream on the refuge, and below the fish barrier, in Black Draw. Both the Black Draw culvert crossing and the Hay Hollow Wash culvert crossings were washed out during the late November 2019 flood event, and contractors discussed alternate designs for the temporary crossing, with the ultimate end product to be a metal bridge. Dossey questioned the multiple damaged erosion control gabions on refuge, as he was under the impression that they were in Black Draw rather than Hay Hollow Wash. Dossey claimed to be completely unaware that contractors had build a culvert crossing upstream of the refuge in Hay Hollow Wash, and this was clarified by Harden who explained the damage to three Hay Hollow Wash gabions and the complete loss of wetlands (critical habitat occupied by endangered fish) due to the catastrophic loss of the contractor's culvert crossing upstream from the refuge. Dossey stated he would raise the Hay Hollow culvert crossing issue with his superiors, asked if a concrete apron style crossing would be more appropriate than the failed earthen levee and culvert style crossing that was constructed at that location, and refuge staff believe this would be a better option. The contract biologists will be out to salvage fish at the failed Black Draw culvert crossing on Jan 2-4, 2020 Dossey stated the repair of the temporary Black Draw culvert crossing is expected to begin Jan 6/7, 2020

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Walker, Cassondra
Subject: Re: Slaughter Ranch Well
Date: Monday, November 4, 2019 5:57:08 AM

Cassondra; Thank you for passing this message along to me. Bill

On Fri, Nov 1, 2019 at 2:41 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Bill,
>
> Today when I was at Slaughter Ranch I meet the Finks, (b) (6) and (b) (6) (if I remember correctly). Allen told me that they are planning to drill a 400 ft well and offered to let us put in some monitoring equipment if we wanted to. He said to coordinate with (b) (6), if that was something we wanted to do. Just wanted to let you know.
>
> Cass
>
> --
> Cassondra Walker, PhD
> Wildlife Biologist
> US Fish and Wildlife Service
>
> San Bernardino and Leslie Canyon NWR
> PO Box 3509
> 7628 N Hwy 191
> Douglas AZ 85608
> Office:520-364-2104x105
> Cell: 520-368-6010
> Fax: 520-364-2130

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Tasha Harden
To: Baca, Joaquin
Cc: Cassondra Walker
Subject: Re: Small Solinst
Date: Wednesday, December 18, 2019 11:12:04 AM

Ok we'll be watching for it and Cass will probably tape it weekly with her other wells. Thanks Joaquin!

Tasha Harden
Assistant Manager
San Bernardino, Leslie Canyon NWRs
Douglas AZ
Office: 520-364-2104 x106
Cell: 520-368-6004

> On Dec 18, 2019, at 11:05 AM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> Hey Tasha,
>
> I am fedexing you a small solinst meter. It will fit the spring snail well access point. If possible I'd like to see its level so i can compare to the model.
>
> Thanks
> --
> Joaquin Baca
> Regional Hydrologist
> US Fish and Wildlife Service, Southwest Region
> Phone: 505 248-6622
> Cell: 505 377-7549
> www.facebook.com/USFWS Water Resources
>
> *"A river is more than an amenity, it is a treasure."*
> *Justice Oliver Wendell Holmes*

From: Walker, Cassondra
To: Baca, Joaquin
Cc: Tasha Dolgoff
Subject: Re: spring snail dtw
Date: Monday, January 13, 2020 3:04:31 PM

We are not allowed to measure depth on the new Slaughter Ranch well or put any monitoring equipment on it. However, Snail Spring was 34.31 on 13 Jan 20.

On Mon, Jan 13, 2020 at 1:38 PM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Have you guys checked depth to water of spring snail and the new well this month. I believe its been a month now since i was there and im curious if there has been a change
>
> thanks
>
> --
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Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

PO Box 3509
7628 N Hwy 191
Douglas AZ 85608
Office:520-364-2104x105
Cell: 520-368-6010
Fax: 520-364-2130

From: Tasha Harden
To: Walker, Cassondra
Subject: Re: Today
Date: Tuesday, December 3, 2019 8:40:36 AM

North first, thanks!

And I talked with Bill about turning that water off since it feeds the Glenn's cattle tank. We are good to turn it off.

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> On Dec 3, 2019, at 8:25 AM, Walker, Cassondra <cassondra_walker@fws.gov> wrote:
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> Ok, which do you want me to install first, North or Twin? I'll get it going as soon as Monty gets the bases put on.
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On Tue, Dec 3, 2019 at 6:10 AM Tasha Harden <tasha_harden@fws.gov> wrote:

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From: Walker, Cassondra
To: Tasha Harden
Subject: Re: Today
Date: Tuesday, December 3, 2019 8:39:11 AM

Yesterday, the laptop would not connect to our monitoring wells. I got the tablet to do it and downloaded data. I left the logs running because I didn't want to start a new one from the tablet until I knew it would be comparable. I found another cable in my office, but it looks used. I'm going to try it at Leslie today. We might need a new cable it this one doesn't work. Although I actually don't know if it is the cable...just something to keep on your radar. In case it's not the cable it might be the software or some settings or whatever...I'm trying to figure it out.

On Tue, Dec 3, 2019 at 7:44 AM Tasha Harden <tasha_harden@fws.gov> wrote:

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From: Walker, Cassondra
To: Tasha Harden
Subject: Re: Today
Date: Tuesday, December 3, 2019 8:28:16 AM

Also, Bill and I talked about the HQ chub since our other big mama died over the weekend. He wanted to have them treated for Ick again, so I got some from PetsMart and did the first dose today. The next one is due on the 5th with a 25% water change. I put this info on the aquarium in case I'm not in or something.

On Tue, Dec 3, 2019 at 8:25 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

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From: Walker, Cassondra
To: Tasha Harden
Cc: Monty Mcdaniel
Subject: Re: Today
Date: Tuesday, December 3, 2019 7:05:52 AM

If we do order anything from InSitu, can we get 6 more desiccant tubes. The ones that I thought were the best still turn purple in a about a week just sitting in my office. I don't know if its the tubes or if the silica is just at the end of its life.

On Tue, Dec 3, 2019 at 6:53 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

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From: Mcdaniel, Monty
To: Tasha Harden
Cc: Walker, Cassondra
Subject: Re: Today
Date: Tuesday, December 3, 2019 3:48:28 PM

Cass,
The bases are installed on Twin & North wells. I'll have to show you which valves to close for pressure.
Monty

On Tue, Dec 3, 2019 at 7:44 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Sounds good! They sell external battery packs which is what Joaquin and Darrell we're gonna send so I'll have them bring it or send it next week.
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--
Monty McDaniel
Maintenance
San Bernardino NWR
(520) 954-0170

From: Baca, Joaquin
To: Harden, Tasha
Cc: Darrell Kundargi
Subject: Re: update on refuge monitoring equipment
Date: Tuesday, November 26, 2019 9:38:53 AM

Hey Tasha,
do you have time for a quick call today? so we can determine exactly which equipment to send out to you?

On Thu, Nov 21, 2019 at 9:59 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

> Oh- as for finding out when the contractors start to pump and how much they pump.... good luck, Bill has been trying to get that info from them for a long time now. The latest info he gave you to run your model is what we have.
>
> On Thu, Nov 21, 2019 at 9:42 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Morning Joaquin-
> > I look forward to meeting you when you come out! Would you like to stay in our house here at headquarters? Its actually a pretty nice set up.
> >
> > I talked with Bill and we will try to run a 2 week test (by turning off water flow to ponds) on hay hollow, oasis, and twin wells. For hay hollow and oasis we will have to really watch our shallow pond levels- and we will have to stop the test early if the levels drop too low. But this time of year they should be ok for a week with no input, maybe they will be ok for two weeks... We already have mitigation well hooked up and the transducer testing, the transducer can be left on that well and checked weekly until we decide it is no longer necessary. Since we need to monitor pond levels pretty much daily we will start the test on Dec 2 and hopefully run them all through the 13th.
> >
> > If you do have some of the transducer bases (at least 2) that would be great if you could send them our way (please let me know asap since we will need to purchase some if you don't). And just in case we don't have enough working transducers (Cass still need to check them) please send us 2 of those as well.
> >
> > Thanks Joaquin!
> >
> >
> > On Wed, Nov 20, 2019 at 10:43 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:
> >
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> > > If at all possible, I would like to have at least 2 weeks of continuous data at each location, hopefully that will be enough time to show correlation between the work day hours when the contractors are pumping, the lag time effects, and normal well pressure. Is it all possible to find out when the contractors are actually pumping and how much?

Will the Hay Hollow ponds be affected if we turned off the flow for a week? (Is it possible to alternate weeks on and off).

Thanks!

On Wed, Nov 20, 2019 at 10:14 AM Harden, Tasha <tasha_harden@fws.gov> wrote:

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From: Harden, Tasha
To: Baca, Joaquin
Cc: Darrell Kundargi
Subject: Re: update on refuge monitoring equipment
Date: Thursday, November 21, 2019 9:42:57 AM

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From: Radke, Bill
To: Tasha Harden
Subject: Re: update on refuge monitoring equipment
Date: Wednesday, November 20, 2019 12:18:05 PM

Tasha; We can try turning off the water for some period of time (a week), but it would require DAILY checks to ensure we are not killing fish. Refilling a pond would be difficult or may never occur if the water begins to drop, and we have minimal staff during this holiday period to salvage, check, or readjust. I agree that having a baseline trend before they begin pumping from the well east of SBNWR would be valuable. I assume they have not finished that well yet. Securing the transducers will be important. Twin well and Oasis well are/were plumbed to accept transducers, and would be the easiest to monitor again. This will require close monitoring of water levels. Thanks, Bill

On Wed, Nov 20, 2019 at 11:46 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Bill
> Joaquin is asking if we could turn off flow at hay hollow for a week to conduct a week long pressure test... He'd really like two weeks... as you stated they want to see if there is a daily correlation to when the contractors pump...
> I think this time of year the ponds would be ok without water for a week... maybe... but we are tracking flow rates and that would slightly interfere with that data collection... what are your thoughts? which data set do you think is a priority?
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
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>
> Begin forwarded message:
>
> **From:** "Baca, Joaquin" <joaquin_baca@fws.gov>
> **Date:** November 20, 2019 at 10:43:44 AM MST
> **To:** "Harden, Tasha" <tasha_harden@fws.gov>
> **Cc:** Darrell Kundargi <darrell_kundargi@fws.gov>
> **Subject: Re: update on refuge monitoring equipment**
>
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www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs

P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Baca, Joaquin
To: Tasha Harden
Cc: Darrell Kundargi
Subject: Re: update on refuge monitoring equipment
Date: Tuesday, November 26, 2019 12:32:53 PM

Hey Tasha,

We are sending you out 3 mini-trolls. Unfortunately we don't use these anymore and we do not have the cable to test them. They should still work, if by chance they don't I will take a few out with me when I go.

You seem to have the monitoring down, which is awesome as its saving tons of time. At this point I think I am mostly just going out in order to familiarize myself with the area, which is useful in itself. The data you send to me I will use for modeling and to show trends/correlations. Without needing to take equipment, i will likely fly out on Dec 9th and return on the 11th.

Thanks for everything you're doing out there.

On Tue, Nov 26, 2019 at 10:17 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> I have some doc appts today but will call in between... maybe around 1130 noonish
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> On Nov 26, 2019, at 9:38 AM, Baca, Joaquin <joaquin_baca@fws.gov> wrote:
>
> Hey Tasha,
> do you have time for a quick call today? so we can determine exactly which equipment to send out to you?
>
> On Thu, Nov 21, 2019 at 9:59 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Oh- as for finding out when the contractors start to pump and how much they pump.... good luck, Bill has been trying to get that info from them for a long time now. The latest info he gave you to run your model is what we have.
> >
> > On Thu, Nov 21, 2019 at 9:42 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
> >
> > > Morning Joaquin-
> > > I look forward to meeting you when you come out! Would you like to stay in our house here at headquarters? Its actually a pretty nice set up.

I talked with Bill and we will try to run a 2 week test (by turning off water flow to ponds) on hay hollow, oasis, and twin wells. For hay hollow and oasis we will have to really watch our shallow pond levels- and we will have to stop the test early if the levels drop too low. But this time of year they should be ok for a week with no input, maybe they will be ok for two weeks... We already have mitigation well hooked up and the transducer testing, the transducer can be left on that well and checked weekly until we decide it is no longer necessary. Since we need to monitor pond levels pretty much daily we will start the test on Dec 2 and hopefully run them all through the 13th.

If you do have some of the transducer bases (at least 2) that would be great if you could send them our way (please let me know asap since we will need to purchase some if you don't). And just in case we don't have enough working transducers (Cass still need to check them) please send us 2 of those as well.

Thanks Joaquin!

On Wed, Nov 20, 2019 at 10:43 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Hey Tasha,
>
> Thats awesome. Getting in some transducers and recording the changes in pressure is really all I was hoping to do at this point. Id like to measure at least one other well if possible, somewhere in the geographic center of the refuge (all wells would be best). I can fedex some tranducers if that works for you. I am still planning on traveling out there either the first or second week of December, but it would be great to be collecting as much data as possible before then.
>
> If at all possible, I would like to have at least 2 weeks of continuous data at each location, hopefully that will be enough time to show correlation between the work day hours when the contractors are pumping, the lag time effects, and normal well pressure. Is it all possible to find out when the contractors are actually pumping and how much? Will the Hay Hollow ponds be affected if we turned off the flow for a week? (Is it possible to alternate weeks on and off).
>
> Thanks!
>
> On Wed, Nov 20, 2019 at 10:14 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Hey Joaquin,
> > We had some old mini-trolls (pressure transducers) that we weren't using. So we have plumbed one into hay hollow well and one into mitigation well. Hay hollow does not build pressure unless we turn off the flow to the ponds so we will only be able to take a single reading each week. Mitigation well is currently not supplying any water to any

ponds so we can program the transducer and leave it on the well to take constant readings every hour, then just extract the data once a week.

--
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Assistant Manager

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--
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From: Harden, Tasha
To: Baca, Joaquin
Subject: Re: update/question
Date: Monday, December 16, 2019 2:28:42 PM
Attachments: SanBernardinoSiteTrip 09Dec19_draft_TH_12-16.docx

---

Thanks Joaquin! Thats good news and we will pull together some equipment/prices for you.

I reviewed the document and made a few corrections/ suggestions with track changes. It looks good. Let me know if you have any questions.

On Mon, Dec 16, 2019 at 10:30 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> Morning Tasha,
>
> Please take a look at the attached draft site trip summary. Please make any changes or add any comments that you feel are necessary. I will be sending this up to leadership as part of my official reporting.
>
> Sounds good on Twin pond, it would be nice to occasionally check on it to see if we record in changes, but I understand if thats not possible. In regards to funding, I have received an ok to send you cost codes, we will need to get a budget and equipment list put together so we know exactly how much is being spent. Im not sure exactly what the total is that we can provide just yet, i would estimate at least 50% if not more. I will send you a cable, what length is Cass requesting?
>
> On Thu, Dec 12, 2019 at 10:58 AM Harden, Tasha <tasha_harden@fws.gov> wrote:
>
> > Hey guys-
> >
> > I talked with Bill about the conservation easement on the malpai border lands that was... removed/lifted.... so that the Glenn's could sell water to the contractors. That CE is not through a federal agency, it was established by the group and there is some process that they went through, as a group. So no need to look into that...
> >
> > Also- we are going to have to turn twin well back on and stop the pressure test that we just initiated on Dec 10th. We saw an immediate impact to both the ponds fed by that well- most alarming was the smaller pond we call twin 2. It has been fairly stable at 1.6 leading up to the 10th and as of yesterday the water is not even touching the gauge. The larger pond, twin 1, has also had a drop in water level as well. So we are not comfortable with continuing the pressure test on this well.
> >
> > The question I have is on funding assistance, Bill had our admin pull numbers on what we've spent so far on just equipment to monitor our water resources and we are up to just over 10k. Since you both have mentioned you have a budget that can help with this type of stuff I'm going to ask ;) Do you have any room in your budget to help cover some of this costs by having us RDS it to your cost codes?
> >
> > And lastly, after our staff meeting today it appears that we could use some more equipment. In getting flow meters established we have two different types currently on refuge. The first type we tried is really basic and not getting us all that we'd like after seeing how the second type functions (the second type allows us to track totals and current flows where the first type is one or the other). We'd like to update all meters so we have

> the second type on all ponds. Also Cass mentioned that she is going to need some more insitu cables.... IF you have the ability to help us purchase more equipment let me know and I will get a list put together with costs and such to send your way.
>
> Thanks again for all your support on this guys!
>
> --
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> Assistant Manager
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From: Fernandez, Juliette
To: Radke, Bill
Cc: Baca, Joaquin; McIntyre, Julie; Sid Slone
Subject: Re: Water Issues
Date: Friday, August 16, 2019 1:30:52 PM

I should be able to make that time. I share all of Bill's concerns. We may need solicitor input at some point.

Juliette Fernandez
Refuge Supervisor AZ/NM

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505-248-6460 Fax

U.S. Fish and Wildlife Service
P.O. Box 1306, Room 4112
Albuquerque, NM 87103-1306

Region 2 Connects

On Fri, Aug 16, 2019 at 11:06 AM Radke, Bill <bill_radke@fws.gov> wrote:

> All; I have a Lower San Pedro River Coordination meeting on Tuesday and will likely be on the road at 3 PM. I will call in, but may or may not have phone coverage.
>
> SBNWR is located in the middle of the many miles of border barrier that will be built across the San Bernardino Valley.
> The big issues for San Bernardino NWR are:
>
> What will 700,000 gallons per day being withdrawn from the aquifer do to the SBNWR artesian wells that supply about 20 wetlands (all are designated critical habitat for listed fish)? Only about 1/3 of the refuge wells have solar powered pumps that could even try to attempt to keep a pond full of water in an emergency (emergency = draw down prevents artesian flow without supplemental pumping).
> Will DHS force FWS to use existing refuge (U.S. Government) wells to provide the water for "national security," and if so, can we legally even do that via any state water use restrictions?
> During 2008, DHS contractors used a private well (Glenn Ranch Well) located adjacent to the west side of SBNWR to withdraw water for their mobile concrete batch plant used to build the existing barrier. They will likely do that again for at least part of their water. Can that well be legally used to provide water from the aquifer that supports the refuge?
> How does the Douglas AMA influence SBNWR water use, if at all?
>
> BANWR is located near portions of the proposed border barrier construction just east of the refuge.
> The big issues for Buenos Aires NWR are:
>
> DHS will likely come to BANWR for water from our HQ irrigation well, which has a water

right associated with it. The well is already allocated/overallocated with current DHS use and planned FWS road construction project beginning in a couple months.
Can water from that well be legally used for border barrier construction?

I look forward to the discussion, which I hope I can participate in. Thank you, Bill Radke

On Fri, Aug 16, 2019 at 8:54 AM Baca, Joaquin <joaquin_baca@fws.gov> wrote:

> I can do that. Can you send me some basic information on the project ahead of time? Specific well # and location is enough to get me started (location the more important).
>
> Thanks
>
> On Thu, Aug 15, 2019 at 5:01 PM McIntyre, Julie <julie_mcintyre@fws.gov> wrote:
>
> > Thanks, All. Working around Joaquin, Paul said he can do Thursday, Aug 20, at 3pm AZ time. Is that too late for anyone?
> >
> > Julie
> >
> > On Wed, Aug 14, 2019 at 7:45 AM Slone, Sid <sid_slone@fws.gov> wrote:
> >
> > > I'm available for a conference call anytime on Monday or Tuesday (19th & 20th) and after 10:00 an on Thursday (22nd).
> > >
> > > Sid
> > >
> > > --
> > > Sid Slone
> > > Manager
> > >
> > > Cabeza Prieta NWR
> > > 1611 N. 2nd Ave.
> > > Ajo, AZ 85321
> > >
> > > PH: 520-387-4993
> > > CELL: 520-560-0555
> >
> > --
> > Julie McIntyre, Ph.D.
> > Assistant Field Supervisor
> > Pollinator Coordinator, Southwest Region (R2)
> >
> > US Fish & Wildlife Service
> > Arizona Ecological Services, Tucson Field Office
> > 201 N. Bonita Avenue, Suite 141
> > Tucson, Arizona 85745

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Fax #: 520.670-6155

"Learn More About Endangered Species Conservation in the Southwest!"

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From: Mcdaniel, Monty
To: Harden, Tasha
Subject: Re: weekly update(s)
Date: Monday, December 23, 2019 7:05:58 AM

Tasha,
Here is a good look at our southern gabion on HH. There is about 14' of erosion on the west side of the gabion structure.

HH South Gabion.MOV

On Fri, Dec 20, 2019 at 2:19 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

> (Next week I understand people are in and out for the holidays, if you are working and can get me updates for your area/items on days you're working please do, if not we'll catch back up after the new year).
>
> During the week of Dec 2nd: water was turned off to Hay Hollow ponds and North pond, and pressure transducers were installed and started logging. Mitigation well was already turned off and pressure transducer installed and logging (filling of the large Yaqui pond was stopped and put on hold until further notice).
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> On Dec 12th: During staff meeting is was brought up that the Twin pond levels had dropped drastically, that Twin2 was almost empty. It was decided to turn water back on and maintain Twin1 pond. Twin2 dropped too low and fish died so maintaining it is no longer necessary. North pond level was 1.18, we will turn water inflow back on after the week of the 20th, when a full two weeks of pressure data has been collected.
>
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> - Pond levels and ground water well readings will be collected on the 20th (usually done on fridays) and will be included in next report.
> - Glenns HH well was not being utilized when checked on 12/19, hose was not hooked up to it- just laid out towards GTR and ending prior to the corrals/grass area.
> - Budget: costs associated with related monitoring is over $10,000.00. Updated cost will be included in next report.
> - T. Harden had a conference call with Rod Dossey (contracted environmental specialist guy for DHS) in regards to temporary black draw crossing on the border road being fixed. (forwarded email to Bill and Juliett from phone prior to call- didn't hear back and Bill said he didn't see it in his emails....?) This is the area that, prior to working on the crossing, they bring out biologist to salvage endangered fish at the crossing and

relocate them upstream in black draw on refuge, but staying below the fish barrier. This culvert crossing was washed out like the Hay Hollows crossing and they are discussing a new design for the temp crossing, with the ultimate end product to be an actual metal bridge. Rod questioned the damaged gabions on refuge, he was under the impression that they were in BD and that one was our fish barrier. He was completely unaware that they had build a culvert crossing upstream of us in HH. So I clarified and explained the HH situation. He was grateful for the clarification, said he would raise the HH crossing issue up the chain. He asked if a concrete "arizona crossing" would be more appropriate compared to the levee culvert type crossing that is currently there. It is more permanent but would not dam up the water, and we have one in BD that works well, so I said yes it would be (we both stated that neither of us are decision makers or POC's for our agencies). The biologist will be out to salvage fish at BD crossing on Jan 2-4. The repair of the temp BD crossing is expected to begin Jan 6/7. He is pushing for them to install the final metal bridge but not getting far with that... he will keep us updated on the HH situation and if he can get them to re-design that crossing.

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--
Monty McDaniel
Maintenance
San Bernardino NWR
(520) 954-0170

From: Mcdaniel, Monty
To: Harden, Tasha
Subject: Re: weekly update(s)
Date: Monday, December 23, 2019 7:01:03 AM

Tasha,
The HH overflow is intact, but there is no standing water in the wash. Not sure if there was before. Here is a video of the outflow.

HH Pond Overflow.MOV

On Fri, Dec 20, 2019 at 2:19 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

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(520) 954-0170

From: Mcdaniel, Monty
To: Harden, Tasha
Subject: Re: weekly update(s)
Date: Monday, December 23, 2019 6:56:23 AM

On Fri, Dec 20, 2019 at 2:19 PM Harden, Tasha <tasha_harden@fws.gov> wrote:

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--
Monty McDaniel
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(520) 954-0170

From: Mcdaniel, Monty
To: Harden, Tasha
Subject: Re: weekly update(s)
Date: Monday, December 23, 2019 6:53:47 AM

Tasha,
I'm going to try to attach some pictures & videos of HH - send in a couple emails. I have measurements as well.
1) I spoke to Fred about the water meter at SR. He pissed and moaned that nobody listens to him - we agreed that I would install a meter box about 3 feet from the wellhead. I'm working on getting the required items.
2) I believe we should add the cost of fixing the road near North Pond to our list. I'll get the cost of road base & grader rental this week.
3) I will come up with a rough estimate on what is required at the HH Gabion Complex. If you have it, I would like to see what Charles came up with. No need in reinventing the wheel.

Thanks,
Monty

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- T. Harden had a conference call with Rod Dossey (contracted environmental specialist guy for DHS) in regards to temporary black draw crossing on the border road being fixed. (forwarded email to Bill and Juliett from phone prior to call- didn't hear back and Bill said he didn't see it in his emails....?) This is the area that, prior to working on the crossing, they bring out biologist to salvage endangered fish at the crossing and relocate them upstream in black draw on refuge, but staying below the fish barrier. This culvert crossing was washed out like the Hay Hollows crossing and they are discussing a new design for the temp crossing, with the ultimate end product to be an actual metal bridge. Rod questioned the damaged gabions on refuge, he was under the impression that they were in BD and that one was our fish barrier. He was completely unaware that they had build a culvert crossing upstream of us in HH. So I clarified and explained the HH situation. He was grateful for the clarification, said he would raise the HH crossing issue up the chain. He asked if a concrete "arizona crossing" would be more appropriate compared to the levee culvert type crossing that is currently there. It is more permanent but would not dam up the water, and we have one in BD that works well, so I said yes it would be (we both stated that neither of us are decision makers or POC's for our agencies). The biologist will be out to salvage fish at BD crossing on Jan 2-4. The repair of the temp BD crossing is expected to begin Jan 6/7. He is pushing for them to install the final metal bridge but not getting far with that... he will keep us updated on the HH situation and if he can get them to re-design that crossing.

--
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Assistant Manager

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Cell: 520-368-6004
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--
Monty McDaniel
Maintenance
San Bernardino NWR
(520) 954-0170

From: Mcdaniel, Monty
To: Tasha Harden
Subject: Re: weekly update(s)
Date: Monday, December 23, 2019 3:46:54 PM

Tasha,
He did not send the quote, I emailed him again. I'll get it to you on Thurs. PHD pond went to 33 gpm with the pump on. Robertson Cienega looks very high, I'll check the wcs if I can find it.
Monty

On Mon, Dec 23, 2019 at 8:16 AM Tasha Harden <tasha_harden@fws.gov> wrote:

> Thanks Monty!
> Also please send me how many more flow meters we need with the link to purchase them.
> I will dig around for what Charles gave me... and see if I kept it. I remember it was pretty simple and just a one page drawing- but it might help if I can find it... although it might not help at all now that the gabion is damage led and that while tricky middle part is gone... and the big water pool at the base is no longer there.
>
> Tasha Harden
> Assistant Manager
> San Bernardino, Leslie Canyon NWRs
> Douglas AZ
> Office: 520-364-2104 x106
> Cell: 520-368-6004
>
> > On Dec 23, 2019, at 6:53 AM, Mcdaniel, Monty <monty_mcdaniel@fws.gov> wrote:
> >
> > Tasha,
> > I'm going to try to attach some pictures & videos of HH - send in a couple
> > emails. I have measurements as well.
> > 1) I spoke to Fred about the water meter at SR. He pissed and moaned that
> > nobody listens to him - we agreed that I would install a meter box about 3
> > feet from the wellhead. I'm working on getting the required items.
> > 2) I believe we should add the cost of fixing the road near North Pond to
> > our list. I'll get the cost of road base & grader rental this week.
> > 3) I will come up with a rough estimate on what is required at the HH
> > Gabion Complex. If you have it, I would like to see what Charles came up
> > with. No need in reinventing the wheel.
> >
> > Thanks,
> > Monty
> >
> >> On Fri, Dec 20, 2019 at 2:19 PM Harden, Tasha <tasha_harden@fws.gov> wrote:
> >>
> >> (Next week I understand people are in and out for the holidays, if you are
> >> working and can get me updates for your area/items on days you're working

>> please do, if not we'll catch back up after the new year).
>>
>>
>>
>> During the week of Dec 2nd: water was turned off to Hay Hollow ponds and
>> North pond, and pressure transducers were installed and started logging.
>> Mitigation well was already turned off and pressure transducer installed
>> and logging (filling of the large Yaqui pond was stopped and put on hold
>> until further notice).
>>
>> On Dec 10th: Twin well was turned off, stopping flow to Twin1 and Twin2,
>> and a pressure transducer was installed and started logging.
>> On Dec 12th: During staff meeting is was brought up that the Twin pond
>> levels had dropped drastically, that Twin2 was almost empty. It was decided
>> to turn water back on and maintain Twin1 pond. Twin2 dropped too low and
>> fish died so maintaining it is no longer necessary. North pond level was
>> 1.18, we will turn water inflow back on after the week of the 20th, when a
>> full two weeks of pressure data has been collected.
>>
>>
>> During the week of Dec20th:
>>
>> - Water to Hay Hollow ponds was turned back on (Dec 16) since pond
>> levels had dropped 0.5 ft. Pressure transducer left in place in case pond
>> levels raise high enough to run another pressure test.
>> - Flow levels were documented; artesian flows fairly consistent.
>> - Pond levels and ground water well readings will be collected on the
>> 20th (usually done on fridays) and will be included in next report.
>> - Glenns HH well was not being utilized when checked on 12/19, hose
>> was not hooked up to it- just laid out towards GTR and ending prior to the
>> corrals/grass area.
>> - Budget: costs associated with related monitoring is over $10,000.00.
>> Updated cost will be included in next report.
>> - T. Harden had a conference call with Rod Dossey (contracted
>> environmental specialist guy for DHS) in regards to temporary black draw
>> crossing on the border road being fixed. (forwarded email to Bill and
>> Juliett from phone prior to call- didn't hear back and Bill said he didn't
>> see it in his emails....?) This is the area that, prior to working on the
>> crossing, they bring out biologist to salvage endangered fish at the
>> crossing and relocate them upstream in black draw on refuge, but staying
>> below the fish barrier. This culvert crossing was washed out like the Hay
>> Hollows crossing and they are discussing a new design for the temp
>> crossing, with the ultimate end product to be an actual metal bridge. Rod
>> questioned the damaged gabions on refuge, he was under the impression that
>> they were in BD and that one was our fish barrier. He was
>> completely unaware that they had build a culvert crossing upstream of us in
>> HH. So I clarified and explained the HH situation. He was grateful for the
>> clarification, said he would raise the HH crossing issue up the chain. He
>> asked if a concrete "arizona crossing" would be more appropriate compared
>> to the levee culvert type crossing that is currently there. It is more

>> permanent but would not dam up the water, and we have one in BD that works
>> well, so I said yes it would be (we both stated that neither of us are
>> decision makers or POC's for our agencies). The biologist will be out to
>> salvage fish at BD crossing on Jan 2-4. The repair of the temp BD crossing
>> is expected to begin Jan 6/7. He is pushing for them to install the final
>> metal bridge but not getting far with that... he will keep us updated on
>> the HH situation and if he can get them to re-design that crossing.
>>
>>
>>
>>
>> --
>> Tasha Harden
>> Assistant Manager
>>
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>>
>
>
> --
> Monty McDaniel
> Maintenance
> San Bernardino NWR
> (520) 954-0170
> <HH Middle Gabion 1.JPG>
> <HH Middle Gabion.JPG>
> <HH North Gabion 1.JPG>
> <HH North Fence.JPG>

--
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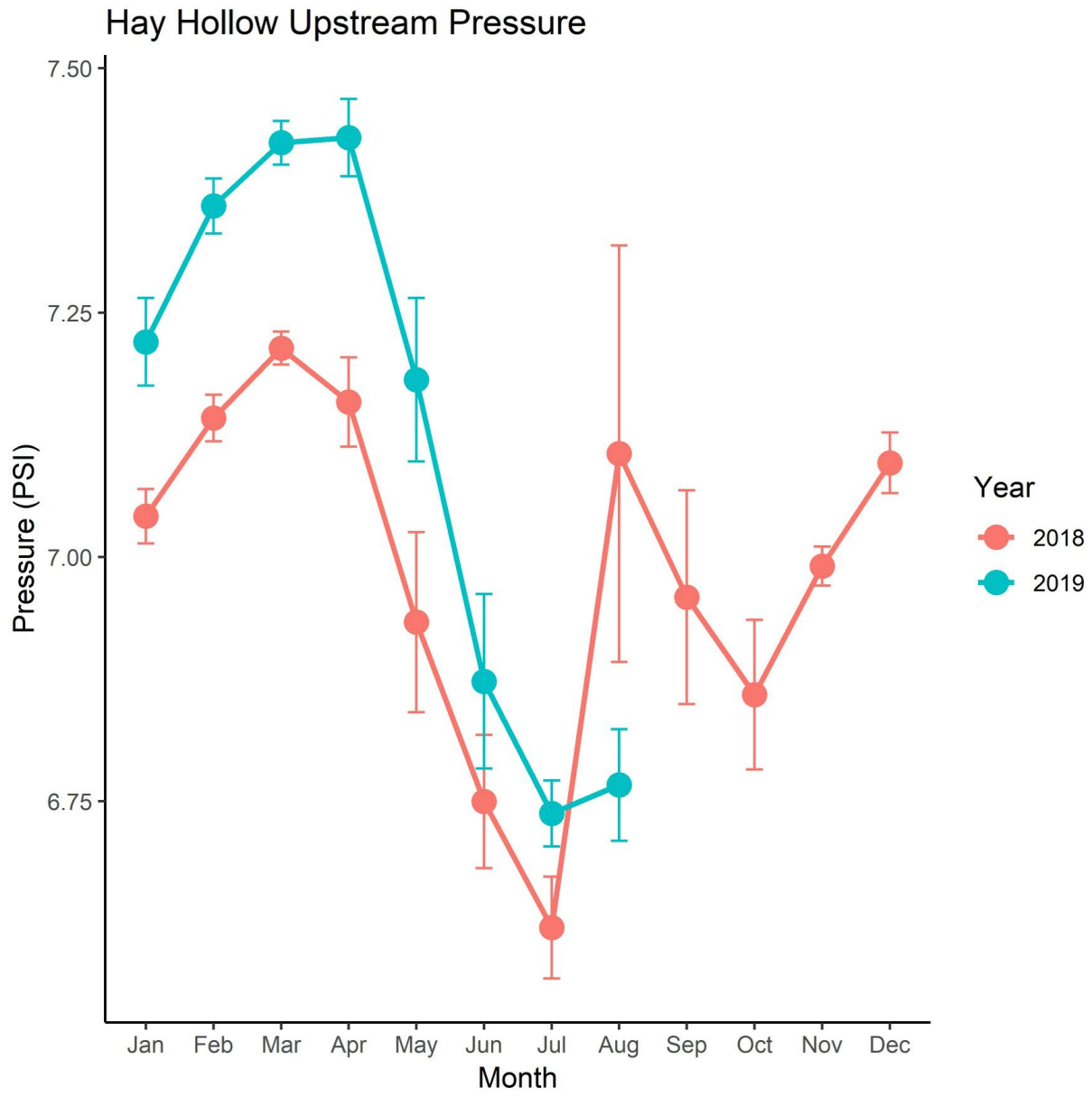
Maintenance
San Bernardino NWR
(520) 954-0170

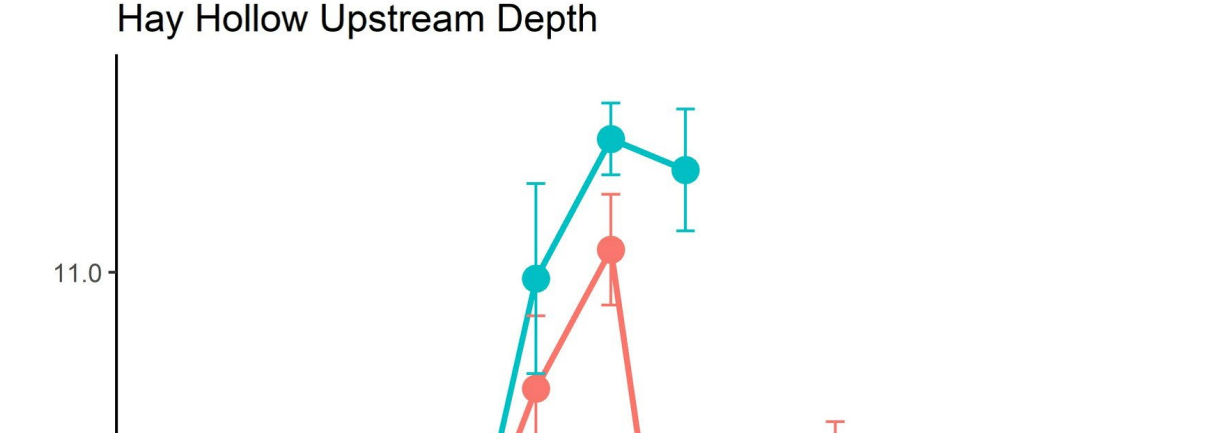
From: Walker, Cassondra
To: Harden, Tasha
Subject: Re: Well graphs
Date: Friday, November 22, 2019 8:03:15 AM
Attachments: Hay Hollow Upstream.png

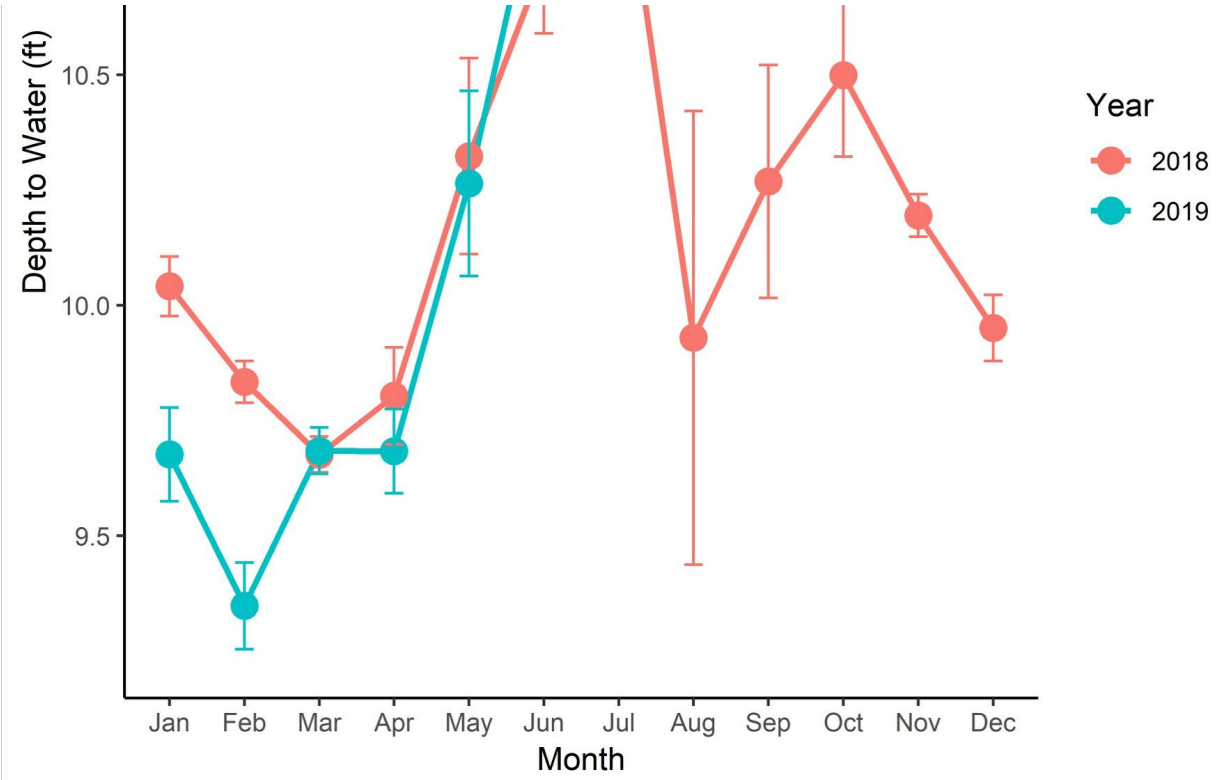
Here is data with 2008 and 2015 data included....for all years, take the beginning/end months with a grain of salt as I don't have complete months.

On Thu, Nov 21, 2019 at 8:15 PM Cassondra Walker <cassondra_walker@fws.gov> wrote:

> Here is a graph I threw together tonight to show changes in depth and pressure for Hay Hollow Upstream. The confidence intervals are standard deviation to show variations in monthly means. This is using transducer data, I thought about adding 2014 (5 years ago) and 2009 (10 years ago), for comparison. Would Bill find something like this useful?







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From: Baca, Joaquin
To: Walker, Cassondra
Cc: Darrell Kundargi; Monty Mcdaniel; Harden, Tasha
Subject: Re: well to pond flow
Date: Friday, January 3, 2020 1:38:11 PM

Cass,

I know wisky isn't up and running yet but can you able to send your most recent pressure data? the previous files ended about December 12. Also if the logger is still recording at Twin please send that, even if the well has been open.

Thanks

On Thu, Jan 2, 2020 at 7:02 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Darrell,
>
> Monty and I measured elevational differences between transducers and pond outflow for three well/pond combos: Bunting well/North pond; Hay Hollow/ N. Hay Hollow pond; Mitigation well/Yaqui pond. We also checked flow rates for the same three locations...the Hay Hollow pond and North pond both had meters, but different kinds. No meter for Yaqui pond as it has never held water. I am putting one of the new transducers on Twin tomorrow (Friday) and when Monty gets back we will gather the same data for Twin.
>
> Elevation from transducer to outflow for Bunting - North: -0.42
> Elevation from transducer to outflow for Hay Hollow - N. Hay Hollow: -1.84
> Elevation from transducer to outflow for MItigation - Yaqui: -2.32
>
> North Pond
>
5 gal fill (sec)	gal/min	gpm (meter)
30.1	9.98	7.52
34.1	8.8	7.39
33.3	9	8.25
33.7	8.91	7.45
33.1	9.07	7.49
34.1	8.08	7.45
33.8	8.88	7.45
33.3	9	7.45
>
> Hay Hollow North
>
5 gal fill (sec)	gal/min	gpm (meter)
19.3	15.6	14.54
18.1	16.6	
17.8	16.1	
18.3	16.3	
17.7	16.9	12.6
17.6	17	13.39

17.8	16.8	9.4
18.2	16.5	11.36

Mitigation (Yaqui pond)	
5 gal fill (sec)	gal/min
6.4	47.16
6.4	47.16
5.6	53.7
6.3	47.6
6.2	48.5
6.1	49.5
6	50
6	50

Cass

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--
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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Baca, Joaquin
To: Walker, Cassondra
Cc: Darrell Kundargi; Monty Mcdaniel; Harden, Tasha
Subject: Re: well to pond flow
Date: Friday, January 3, 2020 1:38:24 PM

Cass,

I know wisky isn't up and running yet but can you able to send your most recent pressure data? the previous files ended about December 12. Also if the logger is still recording at Twin please send that, even if the well has been open.

Thanks

On Thu, Jan 2, 2020 at 7:02 PM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Hi Darrell,
>
> Monty and I measured elevational differences between transducers and pond outflow for three well/pond combos: Bunting well/North pond; Hay Hollow/ N. Hay Hollow pond; Mitigation well/Yaqui pond. We also checked flow rates for the same three locations...the Hay Hollow pond and North pond both had meters, but different kinds. No meter for Yaqui pond as it has never held water. I am putting one of the new transducers on Twin tomorrow (Friday) and when Monty gets back we will gather the same data for Twin.
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5 gal fill (sec)	gal/min
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6.3	47.6
6.2	48.5
6.1	49.5
6	50
6	50

Cass

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Justice Oliver Wendell Holmes

From: Baca, Joaquin
To: Radke, Bill
Subject: Re: (b) (6) Well Water Withdrawal
Date: Monday, December 16, 2019 10:37:12 AM

Morning Bill,

Thank you for these. As I may have mentioned I took photos of the gage as well. I was not aware that we were not allowed to do that, and I did not inform Tasha of my intentions to inspect the gage. She let me know after i took photos that we did not have permission for this. I included the information on my site trip summary. It shows a usage amount of 8.7 million gallons, just over 6 million gallons since your photo or about 114,000 gallons per day. Substantially higher than what we used for the updated model.

On Mon, Dec 16, 2019 at 9:31 AM Radke, Bill <bill_radke@fws.gov> wrote:

> Hi Joaquin; Attached are some pictures of the (b) (6) Well and associated water meter which show the totalizer reading as 025432. I took these photographs on October 10, 2019 when the (b) (6)'s still granted FWS permission to access and check the meter on their well. I also checked the water meter on October 31, 2019 and the totalizer read 053282. Later that same day, when I met with (b) (6) and (b) (6) to discuss water withdrawal, the (b) (6)'s requested that FWS no longer access their well to gather water withdrawal information, but they also stated that they would provide me that information, as the contractors would be providing such information to the (b) (6)'s on a monthly basis. Unfortunately, the (b) (6)'s have not followed through and provided us that water withdrawal information. DHS contractors began pumping water at this well during August 2019. I do not know what the meter reading was at the beginning of this project (I do not know if it started at zero). Thanks for your help, Bill
>
> --
> William R. Radke; Project Leader
> U.S. Fish and Wildlife Service
> Buenos Aires, Leslie Canyon, & San Bernardino NWRs
> P.O. Box 3509
> Douglas, AZ 85608
> Cell: (520) 508-7180

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"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Walker, Cassondra
To: Kundargi, Darrell
Cc: Harden, Tasha; Baca, Joaquin
Subject: Re: WISKI
Date: Thursday, December 26, 2019 12:51:18 PM

I just got the small solonist so I will add Spring Snail Well to the list that I measure with a tape.

On Thu, Dec 26, 2019 at 11:25 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:

> Ok cool, thank you. I assume you want all data I collect on wells, so here is the breakdown of what I am monitoring.
>
> Wells with transducers:
>
> - Bar Boot
> - Leslie Canyon South
> - Leslie Canyon Upstream
> - Hay Hollow Ponds
> - Hay Hollow Upstream
> - Hay Hollow Downstream
> - Slaughter Ranch (this does not yet have a transducer, but we are working on it)
>
> Wells monitored with piezometer tape:
>
> - Bar Boot
> - Leslie Canyon South
> - Leslie Canyon North
> - Leslie Canyon Road
> - Leslie Canyon Upstream
> - Slaughter Ranch (working to get access with tape)
> - Frog
> - Black Draw East
> - Balc Draw South
> - Black Draw North
> - Cemetery North
> - Cemetery South
> - Hay Hollow Ponds
> - Hay Hollow Upstream
> - Hay Hollow Downstream
>
> Wells monitoring pressure (with transducer):
>
> - Mitigation
> - Hay Hollow
> - Bunting (needs a new transducer)
>
> Thanks for your help, I appreciate it.
>
> Cass

On Thu, Dec 26, 2019 at 10:55 AM Kundargi, Darrell <darrell_kundargi@fws.gov> wrote:

> Hi Cass,
>
> You'll need access to the WISKI server to see the database. I've sent an email to Ric Estrada at IRTM to give you and Tasha access. I haven't heard back from Ric, though. Can you please start an IRTM ticket to help keep this process moving? Here's an address to a cloud document that spells out the steps //ifw-hqfs2/ifwwiskicloud-storage/Manuals/NewWISKIUser/2ServerAccessNewUser.pdf
>
> Once you get access to the server I can walk you through accessing WISKI and uploading data. In the meantime, can you give me the names of the wells that you're monitoring so I can create those in the database?
>
> Best,
>
> Darrell
>
> On Thu, Dec 26, 2019 at 8:24 AM Walker, Cassondra <cassondra_walker@fws.gov> wrote:
>
> > Hi Darrell,
> >
> > Quick question: Where do I access the WISKI database? Once I get access, I'll start uploading data, but I don't know where to go to make this happen.
> >
> > Thanks,
> > Cass
> >
> > --
> > Cassondra Walker, PhD
> > US Fish and Wildlife Service
> > Refuge Biologist
> > San Bernardino and Leslie Canyon NWR
> >
> > PO Box 3509
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>
> --
>
> **********
> Darrell Kundargi

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From:	Harden, Tasha
To:	Emily.A.Lester@usace.army.mil
Cc:	Cassondra Walker; Bill Radke; Fernandez, Juliette
Subject:	requested info
Date:	Friday, November 22, 2019 3:04:12 PM
Attachments:	Most recent pond level readings on SBNWR.docx Below graphics show comparison on depth to ground water.docx

---

Hi Emily,
Bill asked if I would provide you with some of our rough monitoring data asap. Attached are a couple documents that I could quickly pull together for you. Also, our biologist Cassondra will reply to all of us today with a map of the wells that she monitors on SBNWR.

Thank you and let me know if you have any questions.

--
Tasha Harden
Assistant Manager

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From: Walker, Cassondra
To: Harden, Tasha
Subject: San B well and Pond Map
Date: Friday, November 22, 2019 3:04:52 PM
Attachments: SanB_Wells and Ponds.pdf

--

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From: Kundargi, Darrell
To: David Stewart; Baca, Joaquin
Subject: San Bernadino Recent Data
Date: Monday, January 13, 2020 1:59:26 PM
Attachments: Bunting_PressureinFeet.CSV
HayHollow_PressureinFeet.CSV
Mitigation_PressureinFeet.CSV
Twin_PressureinFeet.CSV

Attached

--

****

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From:	Baca, Joaquin
To:	Bill Radke
Cc:	Julie McIntyre; David Stewart; Fernandez, Juliette; Sid Slone; Grant Harris; Burck, Peter
Subject:	San Bernardino Drawdown Calculations and legal analysis 2019
Date:	Thursday, September 26, 2019 10:06:56 AM
Attachments:	Cover_Letter_SBNWR2019.pdf [redacted]ttachment2_092519_BAR_Memo SBNWR.pdf **Withhold B5** Attachment1Calculations DrawdownSBNWR_Glenn_Sep19.pdf

---

Bill,

Thank you for your patience on these. Attached are the technical and legal analysis of San Bernardino NWR in regards to the pumping of water at Glenn Ranch, and the potential affects on Refuge water resources. The legal memo has been reviewed once but will receive a final review by DOI SOL on Friday at 9am.

Please let me know if you have any questions or comments.

--
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From:	Burck, Peter
To:	Joaquin Baca
Subject:	San Bernardino NWR - Continuous Pumping vs Pumping Schedule and Jacob Assumptions
Date:	Wednesday, November 20, 2019 9:39:25 AM
Attachments:	20191120 San Bernardino Pumping Rate Calcs.xlsx Cooper-Jacob (1946) Solution for Pumping Tests in Confined Aquifers Aqtesolv.pdf

---

Hi Joaquin,

As we discussed this morning, here is what I found on two topics related to the San Bernardino project.

Topic 1: Continuous Pumping vs. Pumping Schedule

I converted a continuous (24 hours per day, 7 days per week) pumping rate of 21 gallons per hour to an equivalent of 70.56 gallons per hour assuming the well is pumped 10 hours per day, 5 days per week.

The formula I used (which can be applied in a similar manner to other pumping schedules or scenarios) is:

21 gallons per hour * (24 hours/day / 10 hours/day) * (7 days/week / 5 days/week) = **70.56 gallons per day**

I've verified the calculation in the attached spreadsheet. Please let me know if you have questions or would like other pumping rates converted.

Topic 2: Jacob Solution Assumptions

Here are the Jacob solution assumptions from the Aqtesolv website. A pdf version of the full page is attached.

- aquifer has infinite areal extent
- aquifer is homogeneous, isotropic and of uniform thickness
- control well is fully penetrating
- flow to control well is horizontal
- aquifer is nonleaky confined
- flow is unsteady
- water is released instantaneously from storage with decline of hydraulic head
- diameter of a pumping well is very small so that storage in the well can be neglected
- values of u are small (i.e., r is small and t is large)

Please let me know if you have questions. Thank you.

Peter

--
Peter Burck
Hydrologist
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Physical Address:
500 Gold Avenue SW
Albuquerque, NM 87102
Mailing Address:
PO Box 1306
Albuquerque, NM 87103-1306
(505) 248-7961 (Office)

From: Radke, Bill
To: Juliette Fernandez
Cc: Joaquin Baca; Tasha Dolgoff; McIntyre, Julie
Subject: San Bernardino NWR Border Infrastructure Issues
Date: Thursday, October 31, 2019 4:26:31 PM

Hi Juliette; I was disappointed today to see first hand that DHS and U.S. Army Corps of Engineers (ACOE) did not abide by the (most recent) October 16, 2019 Fish and Wildlife Service (FWS) request to minimize water withdrawal from the aquifer that supports all wetlands on San Bernardino NWR. Contractors are continuing to pump high volumes of water from the Glenn Ranch well located about 1.5 miles west of the refuge, have not yet used their newly drilled well located in the Roosevelt Reservation near milepost 9 about 4.8 miles west of the refuge, and sadly did not heed our recommendation not to drill closer that 5-miles from the east side of the refuge. Instead, contractors have begun drilling their second new well 480 FEET east of SBNWR (see photos), and it is on state trust land rather than within the Roosevelt Reservation. All this is in support of the 30-foot tall barrier that contractors began erecting along the south side of the refuge yesterday (see photos). There is also significant road enhancement and water use (see photos) as part of the project.

While DHS/ACOE stated that they would provide FWS updated water use numbers, they have not presented those numbers yet. This increases the concerns already identified within the FWS risk assessment which was provided to DHS/ACOE on October 15, 2019 about border infrastructure impacts to refuge wetlands and listed species. We are monitoring refuge wells, pond levels, water discharge rates, etc., and will be alert to expected changes so that we can respond appropriately. The pictures below were taken this morning. Thank you for your help, Bill Radke

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
Buenos Aires, Leslie Canyon, & San Bernardino NWRs
P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Fernandez, Juliette; Reagan, Steve
Cc: Baca, Joaquin
Subject: San Bernardino NWR Periodic Hydrologic Monitoring Update
Date: Monday, December 30, 2019 12:07:08 PM

Juliette and Steve;

In order to collect a "baseline" condition of selected artesian wells on the refuge, it was necessary to temporarily turn valves off at the Twin Ponds, the Hay Hollow Ponds, North Pond, and Mitigation Pond. The goal was to obtain two weeks worth of "baseline" data from these wells, to compare against in determining the impacts of large scale water withdrawal by DHS contractors.

During the week of Dec 2, 2019, water was turned off to the two Hay Hollow Ponds and to North Pond, and pressure transducers were installed and programmed to begin logging. Mitigation Well was previously turned off (water used to fill and maintain Yaqui Pond was stopped and put on hold), and a pressure transducer was installed and began logging at that location on November 29, 2019.

On Dec 10, 2019, Twin well was turned off, stopping flow to Twin1 and Twin 2 Ponds, and a pressure transducer was installed and began logging. Turning off water to these ponds to collect baseline information resulted in the rapid failure of Twin-2 Pond, which was almost empty by Dec. 12, 2019.

On Dec 12, 2019, water was turned back on to maintain Twin 1 Pond, but Twin 2 Pond had already dropped to a dangerous level, and all existing fish in this pond perished. North Pond level measured 1.18 on the staff gauge, and refuge staff will turn water inflow back on after the week of the 20th, once a full two weeks of pressure data has been collected.

During the week of Dec 20, 2019,

- Water to the two Hay Hollow Ponds was turned back on (Dec 16, 2019) since pond levels had dropped 0.5 ft. The pressure transducer was left in place in case pond levels rise high enough to run another pressure test.
- Flow levels were documented; artesian flows appeared fairly consistent.
- Pond levels and ground water well readings will be collected on Dec 20, 2019.
- The Glenn's Hay Hollow Windmill Well on private land adjacent to the NE corner of the refuge was not being utilized when checked on Dec 19, 2019, the hose was not hooked up to it, and was just laid out towards Geronimo Trail Road and ending east of the Glenn Ranch corrals.
- Refuge costs associated with purchasing monitoring equipment is over $10,000.00. U
- Assistant Manager T. Harden had a conference call on Dec 20, 2019 with Rod Dossey (project environmental specialist contractor) in regards to temporary Black Draw crossing on the border road being repaired. Prior to working on the crossing, contract biologists salvaged endangered fish at the crossing and relocated them upstream on the refuge, and below the fish barrier, in Black Draw. Both the Black Draw culvert crossing and the Hay Hollow Wash culvert crossings were washed out during the late November 2019 flood event, and contractors discussed alternate designs for the temporary crossing, with the ultimate end product to be a metal bridge. Dossey questioned the multiple damaged erosion control gabions on refuge, as he was under

the impression that they were in Black Draw rather than Hay Hollow Wash. Dossey claimed to be completely unaware that contractors had build a culvert crossing upstream of the refuge in Hay Hollow Wash, and this was clarified by Harden who explained the damage to three Hay Hollow Wash gabions and the complete loss of wetlands (critical habitat occupied by endangered fish) due to the catastrophic loss of the contractor's culvert crossing upstream from the refuge. Dossey stated he would raise the Hay Hollow culvert crossing issue with his superiors, asked if a concrete apron style crossing would be more appropriate than the failed earthen levee and culvert style crossing that was constructed at that location, and refuge staff believe this would be a better option. The contract biologists will be out to salvage fish at the failed Black Draw culvert crossing on Jan 2-4, 2020 Dossey stated the repair of the temporary Black Draw culvert crossing is expected to begin Jan 6/7, 2020

--
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From:	Harden, Tasha
To:	Bill Radke
Subject:	an Bernardino NWR Periodic Hydrologic Monitoring Update 01/06/2020
Date:	Monday, January 6, 2020 9:59:39 AM
Attachments:	SBNWR_Pond_Well_Update_30Dec19_03Jan20.docx well diagrams 01 MM.pdf well diagrams 02 MM.pdf

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During the week of January 3, 2020:
Monitoring wells checked and data recorded, pressure logs pulled and sent to water resources, pond inlet flows recorded in survey123, pond levels recorded in survey123.

- 30 Dec 2019 – North pond water turned off – full pressure monitoring new log began.
- 02 Jan 2020 – GPM calculated for Hay Hollow North pond, North pond, and Yaqui pond - via the method requested by water resources (5 gal filled and timed).
- 02 Jan 2020 – Elevation taken between wells and pond inflows as requested by water resources.
- 02 Jan 2020 – Well/pond plumbing diagrams sent to water resources.
- 02 Jan 2020 – Hay Hollow water on - refill ponds due to full pressure monitoring.
- 02 Jan 2020 – Twin 2 boards removed- to allow flow through of any twin one overflow (allowing flow through since pond emptied unexpectedly during the first pressure test attempt).
- 03 Jan 2020 – 11 shiner salvaged from Magoffin pond for ASDM population
- 03 Jan 2020 – Funding assistance cost codes provided to refuge, and request for a quote was sent to In-Situ for more well monitoring equipment needed.
- 03 Jan 2020 – Slaughter Ranch (SLR) Employee informed refuge staff that he won't allow any refuge monitoring equipment (transducer) on their new water well, until specifically instructed to by SLR Alan Finks.
- It should note that during December construction operations were affected/slowed by heavy rains during the beginning of the month and from decreased work force during the end of the month around holidays.

Biology weekly report attached
Well/Pond diagrams attached

--
Tasha Harden
Assistant Manager

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Tischer, David P

From: Tasha Harden <tasha_harden@fws.gov> on behalf of Tasha Harden
Sent: Monday, December 30, 2019 1:50 PM
To: Bill Radke
Subject: San Bernardino NWR Periodic Hydrologic Monitoring Update 12/30/2019

During the week of Dec 20, 2019:

Monitoring wells checked and data recorded, pressure logs pulled and sent to water resources, pond inlet flows recorded in survey123, pond levels recorded in survey123.

- 20 Dec: Water to North pond was turned back on as the transducer (used to collect pressure readings) on Bunting well was malfunctioning and North pond was low (0.09).
- 20 Dec: Both Phd ponds showed low levels (Phd 1: 1.35, Phd 2: 1.06) and will be re-evaluated on 23 Dec.
- 20 Dec: 10 traps were used to continue shiner salvage efforts from Magoffin, three shiner were caught (shiner population is low and refuge is working with ASDM to establish a captive population).
- 20 Dec: Water pipe was connected to Glenn Hay Hollow Windmill Well, it was still not being utilized.

During the week of Dec 27, 2019:

**Monitoring wells checked and data recorded, pressure logs pulled and sent to water resources, pond inlet flows recorded in survey123, pond levels recorded in survey123. **

- 23 Dec: 5 new level trolls were purchased by water resources for pressure test, due to issues with the current older trolls.
- 23 Dec: Hay Hollow ponds water was turned off – pressure transducer started monitoring a new pressure test log.
- 23 Dec: Phd ponds were too low, Solar power pump on Bath House well was turned back on to raise pond levels back up; the pump will have to stay on to maintain pond levels. Artesian flow is no longer enough to maintain these pond levels. The exact point in time at which artesian flow became insufficient for these ponds is unknown (probable potential influencing factors include the recent Mexico Federal Hwy 2 improvements and the current border wall construction- both projects entail pumping very large amounts of water from the same aquifer).
- 23 Dec: Hay Hollow cultural sites assessed. Three sites were identified; one site appears to have recent erosion from flood events (pics attached).
- 27 Dec: North pond level was back up to 1.46 from 0.09, so the water was turned off and pressure monitoring at Bunting well was re-initiated with a different older transducer.
- 27 Dec: Phd2 pond level has risen from 1.06 to 1.27. Both PhD ponds

still need to increase. Normal pond level is ~1.5 for these ponds.
- 27 Dec: monitoring depth to ground water at Snail Spring well was initiated with a borrowed smaller piezometer from water resources.
- 27 Dec: Quote to update and standardize all flow meters on SB was sent to water resources for funding assistance ($3,066.57).

From:	Burck, Peter
To:	Louis duBois
Cc:	Joaquin Baca; Darrell Kundargi; Juliette Fernandez
Subject:	San Bernardino NWR Survey Needs
Date:	Monday, January 20, 2020 4:07:39 PM

Hi Louis,

Here is my current understanding of our needs at San Bernardino NWR in Arizona.

Using Real-time Kinematic (RTK) equipment, survey locations and elevations of four refuge ponds (Bunting, Hay Hollow, Mitigation and Twin):

- Well pressure measurement point elevation
- Well outflow elevation
- Pond high water mark perimeter
- Top elevation of pond outflow structure (Can you stake out these structure so we can use them for a benchmark for later surveys, if needed?)
- Pond bathymetry (in regular shaped ponds, can be 1 transect each in the x and y direction). Ponds can be done with a rod and transit as long as they're tied to the outflow benchmark.
- Water surface elevation at the time of the survey
- Pond staff plates if they exist

The resulting location and elevation data are required to quantify the amount of water the refuge needs.

Please let me know if you have questions or if you'd like to discuss further. I will be attending off-site training Tuesday through Thursday, but will endeavor to reply as quickly as I'm able. Thank you.

Peter

--
Peter Burck
Hydrologist
US Fish & Wildlife Service
National Wildlife Refuge System
Division of Water Resources
Physical Address:
500 Gold Avenue SW
Albuquerque, NM 87102
Mailing Address:
PO Box 1306
Albuquerque, NM 87103-1306
(505) 248-7961 (Office)

From:	Radke, Bill
To:	(b) (6), (b) (7)(C); Emily.A.Lester@usace.army.mil
Cc:	Brent Range; Aaron Archibeque; Juliette Fernandez; Joaquin Baca; Steve Reagan; McIntyre, Julie; Scott Richardson; Tasha Dolgoff
Subject:	San Bernardino NWR Well Drawdown Calculations and Legal Analysis
Date:	Tuesday, October 15, 2019 9:40:12 AM
Attachments:	Cover_Letter_SBNWR2019.pdf Attachment1_151019_SBNWR_Drawdown.pdf [redacted]ttachment2_SBNWR_Legal_151019 (1).pdf **Withhold B5**

Paul and Emily;

As we have explained previously, the U.S. Fish & Wildlife Service (Service) is concerned about ongoing and planned groundwater use in the vicinity of San Bernardino National Wildlife Refuge (SBNWR) in Cochise County, Arizona resulting from border infrastructure construction.

We have therefore completed a water drawdown analysis of the water use impacts on refuge water resources from the Glenn Ranch Well (located 1.6 miles from SBNWR wetlands), and have also prepared a DOI Solicitor-reviewed legal analysis of Arizona groundwater wells and options open to the Service. These documents are attached to this email.

Please read these documents, evaluate what can be done to avoid, minimize, or mitigate the impacts, and contact me regarding your thoughts on how best to proceed in addressing the identified concerns.

Thank you for your help, Bill Radke

--
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: (b) (6)
Bcc: Bill Radke
Subject: San Bernardino Valley Hydrology Reports
Date: Wednesday, November 6, 2019 11:50:23 AM
Attachments: ADEQ Ambient Groundwater Quality Study 2002.pdf
USGS Water Resources Investigations Report 90-4190 February 1991.pdf
USGS Report 90-4190 February 1991 page 20 - 28.pdf
Aquifer Test at SBNWR December 2002.pdf

Hi (b) (6);

I know you are very busy with so many issues, and I am thankful you for the opportunity on Monday to sit down with you and (b) (6) to discuss the ongoing border infrastructure project and related topics. It was great to clarify known information, help clear up misinformation, identify all the currently existing conditions, and make plans for moving forward.

It seems like monitoring the various existing wells, and alerting each other to any potential changes may be our best plan forward. Refuge staff will be monitoring refuge well discharge rates and monitoring refuge well depth to water and providing that information to DHS/USACOE. We look forward to any water use information from the Glenn Ranch "Granite Well" if you are able to periodically provide it to us as part of this monitoring effort. The goal of all this monitoring is to use all the data to help evaluate any possible effects of water withdrawal related to the border infrastructure project.

Attached below is the Fish and Wildlife Refuge Aquifer Test (Pump Test) that Mr. (b) (6) helped us perform on the refuge back in 2002. This is the test that helped us produce the "model" to help assess the impacts of future water withdrawal. Also attached are two hydrology reports relative to the San Bernardino Valley. One of these, the USGS report, is in two attachments (the two attachments equal one complete report). These may be interesting to you, as they help define the aquifer and provide basic background information about the aquifer in the valley. At the very least, you now have them and can just file them away. These are simply for your information, as I understood you were otherwise unaware of the reports. Please reach out to me if you have any questions, need any information from me, or otherwise need to talk about any of this.

Thank you for your help, Bill

--
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From:	Baca, Joaquin
To:	Grant Harris
Cc:	Steve Reagan; Fernandez, Juliette; Bill Radke; Burck, Peter; Tasha Dolgoff; Julie McIntyre
Subject:	San Bernardino, Site Visit Summary Dec 9-11
Date:	Monday, December 16, 2019 2:57:32 PM
Attachments:	SanBernardinoSiteTrip 09Dec19.pdf

Folks,

Please see attached summary of the San Bernardino site visit on December 9-11, 2019. If there are any questions or comments please contact me directly.

Thank you.

--
Joaquin Baca
Regional Hydrologist
US Fish and Wildlife Service, Southwest Region
Phone: 505 248-6622
Cell: 505 377-7549
www.facebook.com/USFWS Water Resources

"A river is more than an amenity, it is a treasure."
Justice Oliver Wendell Holmes

From: Walker, Cassondra
To: Harden, Tasha
Subject: SBNWR important water dates
Date: Sunday, December 29, 2019 1:43:44 PM

Hey Tahsa,

I'm keeping a log of the dates when we do stuff to the wells and ponds. I think this is easier to visualize and access when you need it. I will continue to add dates to the water graphs and to the weekly summary as well, but this way we have a comprehensive list.

Important Water Dates for SBNWR

21 Oct 19 – Mesquite turned off

22 Nov 19 – Solar power turned off (Bunting, Bath House, Mitigation, Hackberry)

29 Nov 19 – Hay Hollow well pressure monitored – water turned off to Hay Hollow ponds

04 Dec 19 – Bunting well pressure monitored – water turned off to North pond

10 Dec 19 – Twin well pressure monitored – water turned off to Twin ponds

12 Dec 19 – Twin ponds low, water turned back on – pressure monitoring terminated

16 Dec 19 – Hay Hollow ponds low, water turned back on – pressure monitoring maintained

20 Dec 19 – Bunting well transducer failed, removed and water turned back on to North pond

23 Dec 19 – Hay Hollow ponds water turned off – pressure monitoring new log

23 Dec 19 – Phd ponds low, Solar power to Bath House well turned back on

27 Dec 19 - Phd ponds up

27 Dec 19 - North pond water turned off - pressure monitoring with new transducer installed

27 Dec 19 - initiation of Snail Spring well monitoring

--

Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
San Bernardino and Leslie Canyon NWR

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From:	Kundargi, Darrell
To:	Bill Radke; Harden, Tasha; Cassondra Walker; Monty Mcdaniel; Baca, Joaquin; Peter Burck; Juliette Fernandez; MacMillan, Ariel; Benjamin Padilla; Steve Reagan; Steven Sesnie; Harris, Grant; David Stewart
Subject:	SBR Data Online
Date:	Wednesday, January 15, 2020 2:39:44 PM
Attachments:	image.png image.png

Hi All,

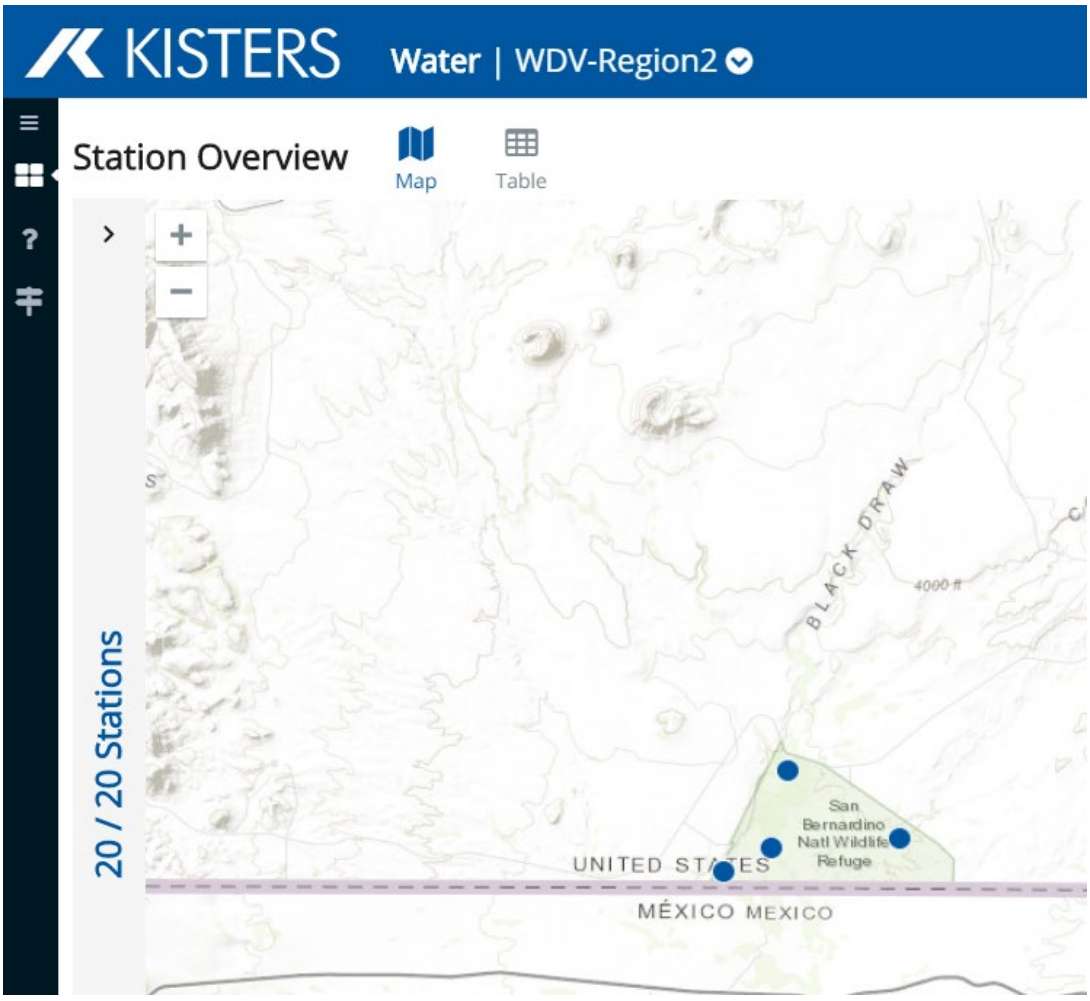
The data from San Bernadino NWR is now available online at the following address:

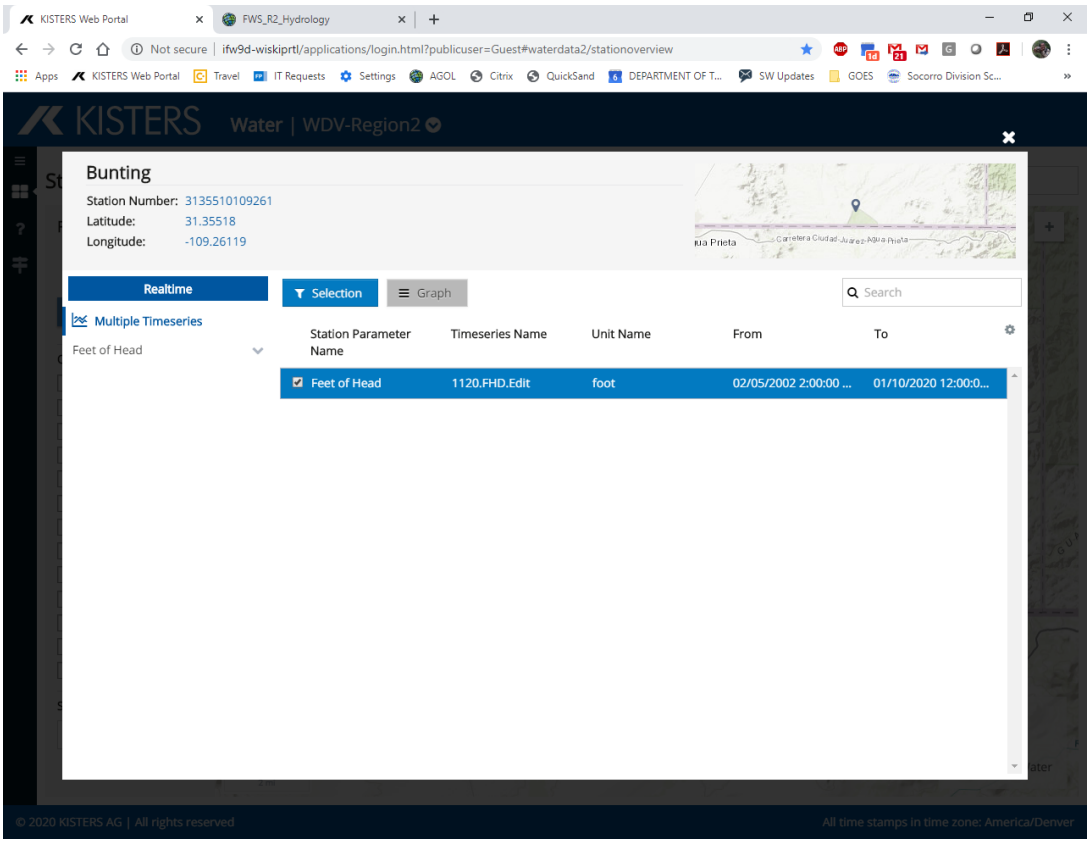
http://ifw9d-wiskiprtl/applications/login.html?publicuser=Guest#waterdata2/stationoverview

The website works like your standard map based site: zoom in on the refuge and the well locations show up as dots. Click on the well you're interested in, select the data set you want, then hit graph (see screenshots below).

Data will update as it comes in. Let me know if you have any questions about navigating the site.

Darrell





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Darrell Kundargi
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From: Harden, Tasha
To: Bill Radke
Subject: SLR update
Date: Friday, January 3, 2020 12:19:08 PM

Hey Bill,
Cass was out talking with Fred and mentioned the transducer was ready to be installed. Fred told Cass, that Alan told Fred absolutely nothing of ours was to go on their well.
So we won't do anything unless we hear differently from you... or them via you.

--
Tasha Harden
Assistant Manager

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Fax: 520-364-2130

From: Callegary, James
To: Bill Radke; Amy Elizabeth Rosebrough; Joaquin Baca
Subject: Stakeholder engagement and hydrologic modeling
Date: Wednesday, December 4, 2019 5:06:06 PM

Hi Bill and Joaquin,
It's been a while since we spoke. We continue our work on the project and part of that is master's student Amy Rosebrough's work on developing simple hydrologic models to help inform stakeholders about hydrology and to function as a tool for decision making. Amy (cc'd) can tell you more.

At this point, she is moving from the modeling stage to creating an interactive GUI to help accomplish the goals of learning and decision making. If possible we would like to work with the Altar Valley Conservation Alliance (AVCA) on this project. Amy hasn't had a lot of experience wit stakeholder groups and is looking for opportunities to see how meetings are run, and to learn more about the group. We would also need to contact the group to see if they would be interested.

If you have thoughts about who to contact first, whether this is a good idea or not, or any other ideas we would be happy to hear them.

As we discussed a while back, if they would be interested, we would also like to inform the Tohono O'odham Nation about the project. Do you have any thoughts about the best way to go about contacting them? I have been given some suggestions, but the people suggested aren't directly involved with tribal government or environmental issues.

Regards,
James

James Callegary, Ph.D.
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USGS Arizona Water Science Center
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Tucson, Arizona 85719
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Fax: 520-670-5592
www.researchgate.net/profile/James_Callegary

From:	Radke, Bill
To:	Juliette Fernandez
Cc:	Tasha Dolgoff
Subject:	Timeline Pertinent to Border Infrastructure Construction Impacts to SBNWR
Date:	Tuesday, November 12, 2019 6:36:40 AM
Attachments:	San Bernardino NWR Timeline Regarding Wells and Water Withdrawal for Border Infrastructure Projects Through 110719.docx

Hi Juliette; Attached is the timeline you asked me to pull together. If you need more details, I can provide them. Thank you for your help and support, Bill Radke

--
William R. Radke; Project Leader
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Cell: (520) 508-7180

From:	Brown, Keely N CIV USARMY CENWS (USA)
To:	Leemans, Adam J CPT USARMY ENGINEER SCHL (USA); Ozuna, Victor SPK; Lester, Emily A CIV USARMY CESPL (USA); (b) (6), (b) (7)(C); Cook, Shawn M MAJ USARMY CENWO (US); (b) (6), (b) (7)(C) ; (b) (6), (b) (7) ; bill_radke@fws.gov
Subject:	Tucson Project 3: Groundwater Discussion and Coordination
Start:	Wednesday, October 16, 2019 11:00:00 AM
End:	Wednesday, October 16, 2019 11:30:00 AM
Location:	Phone: (b) (5) ; Access: (b) (5) ; Security: (b) (5)

All –

This meeting is to discuss the use of groundwater in the vicinity of the San Bernandino Refuge.

The team will discuss the data previously provided, well locations, and the potential impacts.

Have a great day.

Keely Brown
Project Manager
TF Barrier
US Army Corps of Engineers
Keely.N.Brown@usace.army.mil
Mobile: (843) 478-6966

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From:	Radke, Bill
To:	Joaquin Baca
Subject:	Tucson Project 3: Groundwater Discussion and Coordination
Start:	Wednesday, October 16, 2019 11:00:00 AM
End:	Wednesday, October 16, 2019 11:30:00 AM
Location:	Phone: (b) (5) ; Access: (b) (5) ; Security: (b) (5)
Attachments:	invite.ics

Joaquin and Tasha; The meeting looks like a telephonic meeting and it is scheduled for 10 AM (Arizona time). Please call in if you are able to. Thank you, Bill Radke

---------- Forwarded message ---------
From: Brown, Keely N CIV USARMY CENWS (USA) <Keely.N.Brown@usace.army.mil <mailto:Keely.N.Brown@usace.army.mil> >
Date: Tue, Oct 15, 2019 at 11:44 AM
Subject: [EXTERNAL] Tucson Project 3: Groundwater Discussion and Coordination
To: Leemans, Adam J CPT USARMY ENGINEER SCHL (USA) <Adam J.Leemans@usace.army.mil <mailto:Adam.J Leemans@usace.army.mil> >, Ozuna, Victor SPK <Victor.Ozuna@usace.army.mil <mailto:Victor.Ozuna@usace.army.mil> >, Lester, Emily A CIV USARMY CESPL (USA) <Emily A.Lester@usace.army.mil <mailto:Emily.A.Lester@usace.army.mil> >, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) <mailto (b) (6), (b) (7)(C) > >, Cook, Shawn M MAJ USARMY CENWO (US) <Shawn.M.Cook@usace.army.mil <mailto:Shawn.M.Cook@usace.army.mil> >, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) <mailto (b) (6), (b) (7)(C) > >, (b) (6), (b) (7)(C) <(b) (6), (b) (7)(C) <mailto (b) (6), (b) (7)(C) > >, bill_radke@fws.gov <mailto:bill_radke@fws.gov> <bill_radke@fws.gov <mailto:bill_radke@fws.gov> >

All –

This meeting is to discuss the use of groundwater in the vicinity of the San Bernandino Refuge.

The team will discuss the data previously provided, well locations, and the potential impacts.

Have a great day.

Keely Brown
Project Manager
TF Barrier
US Army Corps of Engineers
Keely.N.Brown@usace.army.mil <mailto:Keely.N.Brown@usace.army.mil>
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--

William R. Radke; Project Leader
U.S. Fish and Wildlife Service

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From: Padilla, Benjamin
To: Baca, Joaquin
Subject: Updated Broska Files
Date: Monday, December 30, 2019 1:52:36 PM
Attachments: SanBernardinoBroskaFiles.xlsx

--

Benjamin Padilla
Civil Engineering Student
University of New Mexico
Hydrologist Tech
U.S Fish and Wildlife
Tel: 505-227-6510ka

From: Radke, Bill
To: (b) (6)
Subject: Updated USFWS Technical Analysis Related to Border Wall Construction
Date: Tuesday, November 12, 2019 6:50:03 AM
Attachments: Calculations DrawdownSBNWR_Addendum07Nov19.pdf

Hi (b) (6); As I explained to you and (b) (6) on October 31, the USFWS would be updating their Technical Analysis (hydrology report) based upon the new numbers provided by U.S. Army Corps of Engineers regarding water use estimates and timing of water withdrawal. I want to be certain you understand that this analysis is based upon the information provided by USACE, which remains incomplete (does not take into effect any water withdrawal from the new Mile Marker 9 well, for example). I also want you to understand that this analysis was calculated and provided to DHS/USACE last week simply to help articulate USFWS concerns, provide a more accurate risk assessment, and to help the agencies and contractors consider ways to adequately address the concerns and minimize or mitigate negative impacts. Please contact me if you have comments or questions about the technical analysis. Thank you, Bill

--
William R. Radke; Project Leader
U.S. Fish and Wildlife Service
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Douglas, AZ 85608
Cell: (520) 508-7180

From: Radke, Bill
To: Alan Finks
Subject: USFWS Updated Technical Analysis Regarding Border Wall Construction and Groundwater Withdrawal
Date: Tuesday, November 12, 2019 6:57:59 AM
Attachments: Calculations DrawdownSBNWR_Addendum07Nov19.pdf

Hi Alan; The USFWS updated their Technical Analysis (hydrology report) based upon new numbers provided on 11/01/19 by U.S. Army Corps of Engineers regarding water use estimates and timing of water withdrawal. I want to be certain you understand that this analysis is based upon the information provided by USACE, which remains incomplete (does not take into effect any water withdrawal from the new Mile Marker 9 well, for example). I also want you to understand that this analysis was calculated and provided to DHS/USACE last week simply to help articulate USFWS concerns, provide a more accurate risk assessment, and to help the agencies and contractors consider ways to adequately address the concerns and minimize or mitigate negative impacts. I have also requested help from Region-2 USFWS hydrologists to help measure current groundwater conditions on SBNWR and (with your permission) at Slaughter Ranch, and refuge staff are cooperating with Arizona Department of Water Resource personnel to collaborate in measuring refuge wells to help document potential changes. Please contact me if you have comments or questions about any of these issues. Thank you, Bill

--

William R. Radke; Project Leader
U.S. Fish and Wildlife Service
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P.O. Box 3509
Douglas, AZ 85608
Cell: (520) 508-7180

From: Lester, Emily A CIV USARMY CESPL (USA)
To: Olson, Troy A CIV USARMY CESPD (USA); "(b) (6), (b) (7)(C)"; Fernandez, Juliette; Brent Range; McIntyre, Julie; Radke, Bill; Fernandez, Erin; Joaquin Baca; Brown, Keely N CIV USARMY CENWS (USA); Leemans, Adam J CPT USARMY ENGINEER SCHL (USA); Ozuna, Victor SPK; Turner, Anthony M CIV USARMY CEHNC (US); [redacted]; "David Boyes"; jhutira@cogstone.com; O"Loughlin, James
Subject: USFWS/CBP/USACE - SBNWR Well and Water Usage Discussion
Attachments: Calculations DrawdownSBNWR_Addendum07Nov19.pdf

Hello All,

Please reserve the above date and time to review the updated USFWS Technical Report (attached) related to SBNWR well drawdown and project estimated water usage. Please share with those who should attend from USFWS, CBP or USACE.

WebEx (b) (5)
Access Code (b) (5)
Password (b) (5)

Thank you,

Emily Lester
NEPA Compliance Officer
Task Force Barrier
US Army Corps of Engineers
Emily.A.Lester@usace.army.mil

Tel: 602.230.6995 Office
Tel: 213.479.2132 Mobile

Building Strong!

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From: Walker, Cassondra
To: Harden, Tasha
Subject: Weekly summary for Dec 16-20
Date: Wednesday, December 25, 2019 7:44:27 PM
Attachments: SBNWR_Pond_Well_Update_16_20Dec.docx

Here is the summary I have for last week. I will amend the graphs every week, and note any changes and any other things in the summary at the end. Would you like me to include anything else?

--
Cassondra Walker, PhD
US Fish and Wildlife Service
Refuge Biologist
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From: Walker, Cassondra
To: Harden, Tasha
Subject: weekly update 23 -27 Dec
Date: Sunday, December 29, 2019 8:01:55 PM
Attachments: SBNWR_Pond_Well_Update_23_27Dec.docx

Updates for 23 - 27 Dec: Pond Levels, Pond Flow, Monitoring Well Tape Measurements, and Hay Hollow Well transducer data. Also new dates for monitoring activities.

--

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From: Walker, Cassondra
To: Darrell Kundargi; Baca, Joaquin; Harden, Tasha
Subject: Weekly well data
Date: Monday, January 13, 2020 8:01:50 AM
Attachments: HayHollow_20Dec-03Jan.csv
Mitigation_27Dec-03Jan.csv
Bunting_06Jan-10Jan.csv
Twin_06Jan-10Jan.csv
HayHollow_03Jan-10Jan.csv
Mitigation_03Jan-10Jan.csv
HHP_27Dec-03Jan.csv
HHD_27Dec-03Jan.csv
HHU_27Dec-03Jan.csv
HHU_03Jan-10Jan.csv
HHD_03Jan-10Jan.csv
HHP_03Jan-10Jan.csv

Here is last weeks well data....

Pressure and Depth for:
Hay Hollow Ponds(HHP), Hay Hollow Upstream (HHU), and Hay Hollow Downstream (HHD)

Pressure data for:
Hay Hollow, Mitigation, Twin, and Bunting

Cass

--
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From:	Walker, Cassondra
To:	Baca, Joaquin; Darrell Kundargi; Harden, Tasha
Subject:	Well Pressure Data
Date:	Saturday, January 4, 2020 6:58:53 AM
Attachments:	HayHollow_29Nov_20Dec.csv HayHollow_20Dec_03Jan.csv Mitigation_29Nov_13Dec.csv Mitigation_13Dec_20Dec.csv Mitigation_20Dec_27Dec.csv Mitigation_27Dec_03Jan.csv Bunting.xlsx Twin.csv

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Joaquin,

As you requested, here are the pressure data for Hay Hollow and Mitigation. It is continuous from 29 Nov to 03 Jan...just on different files. These transducers seem to be working just fine and I will continue to send data.

I've put multiple transducers on Bunting and Twin, but have had issues with them maintaining logs. Most of the time, it is just one measurement that was recorded, but I have collated all of Bunting onto one Excel file. Twin only has one file. I tried putting a new transducer on Twin, but it would not connect, so I need to try to figure out what is going on there. I am still having logging issues with Bunting as well...if I cannot figure it out on Monday, I will have to call Insitu support to see if they have ideas, just FYI on why I don't have more data for these two wells.

Mitigation Notes:
Well does not currently fill a pond, so water is not turned on/off

Hay Hollow Notes:
29 Nov 19: Pressure log started, Water off to ponds
16 Dec 19: Water on to ponds, log maintained
23 Dec 19: Water off to ponds, log maintained
02 Jan 19: Water on to ponds, log maintained

Cass
--
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From: Walker, Cassondra
To: Darrell Kundargi; Baca, Joaquin; Monty Mcdaniel; Harden, Tasha
Subject: well to pond flow
Date: Thursday, January 2, 2020 7:02:27 PM

Hi Darrell,

Monty and I measured elevational differences between transducers and pond outflow for three well/pond combos: Bunting well/North pond; Hay Hollow/ N. Hay Hollow pond; Mitigation well/Yaqui pond. We also checked flow rates for the same three locations...the Hay Hollow pond and North pond both had meters, but different kinds. No meter for Yaqui pond as it has never held water. I am putting one of the new transducers on Twin tomorrow (Friday) and when Monty gets back we will gather the same data for Twin.

Elevation from transducer to outflow for Bunting - North: -0.42
Elevation from transducer to outflow for Hay Hollow - N. Hay Hollow: -1.84
Elevation from transducer to outflow for MItigation - Yaqui: -2.32

North Pond

5 gal fill (sec)	gal/min	gpm (meter)
30.1	9.98	7.52
34.1	8.8	7.39
33.3	9	8.25
33.7	8.91	7.45
33.1	9.07	7.49
34.1	8.08	7.45
33.8	8.88	7.45
33.3	9	7.45

Hay Hollow North

5 gal fill (sec)	gal/min	gpm (meter)
19.3	15.6	14.54
18.1	16.6	
17.8	16.1	
18.3	16.3	
17.7	16.9	12.6
17.6	17	13.39
17.8	16.8	9.4
18.2	16.5	11.36

Mitigation (Yaqui pond)

5 gal fill (sec)	gal/min
6.4	47.16
6.4	47.16
5.6	53.7
6.3	47.6

6.2	48.5
6.1	49.5
6	50
6	50

Cass

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From: Tasha Harden
To: Bill Radke
Cc: Monty Mcdaniel; Cassondra Walker; victor_harden@fws.gov; (b) (6) [redacted]; brenda_leon@fws.gov
Subject: Well valves
Date: Monday, November 25, 2019 10:28:44 AM

All,
Monty found Urquides pond was turned slightly on... This is the second instance of our flows being messed with lately. Monty is going to remove valve handles in an attempt to minimize people messing with our water control- this will make it so you'll need a wrench or a handle to alter flows. Monty will put the handles up in the shop at SB Incase one of us needs them.

Tasha Harden
Assistant Manager
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From: Radke, Bill
To: Joaquin Baca
Subject: (b) (6) Well Water Withdrawal
Date: Monday, December 16, 2019 9:31:59 AM

Hi Joaquin; Attached are some pictures of the (b) (6) Well and associated water meter which show the totalizer reading as 025432. I took these photographs on October 10, 2019 when the (b) (6)'s still granted FWS permission to access and check the meter on their well. I also checked the water meter on October 31, 2019 and the totalizer read 053282. Later that same day, when I met with (b) (6) and (b) (6) to discuss water withdrawal, the (b) (6)'s requested that FWS no longer access their well to gather water withdrawal information, but they also stated that they would provide me that information, as the contractors would be providing such information to the (b) (6)'s on a monthly basis. Unfortunately, the (b) (6)'s have not followed through and provided us that water withdrawal information. DHS contractors began pumping water at this well during August 2019. I do not know what the meter reading was at the beginning of this project (I do not know if it started at zero). Thanks for your help, Bill

--
William R. Radke; Project Leader
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