

From: [Walker, Cassondra M](#)
To: [Harden, Tasha](#)
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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

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