

7. Proposed place of use (Describe by legal subdivisions. If for irrigation, state number of acres to be irrigated.)

3.43 Acres (at a duty of 4.0 AF/Acre) within portions of the N½ SW¼ and S½ NW¼ of Section 20, T. 12N., R.20E., M.D.B.&M. (Please see attached map, and miscellaneous comments section, below).

8. Existing place of use (Describe by legal subdivisions. If changing place of use and/or manner of use of irrigation permit, describe acreage to be removed from irrigation.)

3.67 Acres (at a duty of 4.0 AF/Acre) within the SE¼ SW¼ Section 19, T. 12N., R.20E., M.D.B.&M. (Please see attached map, and miscellaneous comments section, below).

9. Proposed use will be from January 1st to December 31st of each year.
Month and Day Month and Day

10. Existing use permitted from January 1st to December 31st of each year.
Month and Day Month and Day

11. Description of proposed works. (Under the provision of NRS 535.010 you may be required to submit plans and specifications of your diversion or storage works.) (State manner in which water is to be diverted, i.e., diversion structure, ditches, pipes and flumes or drilled well, pump and motor, etc.)

Well Already Installed and Functional. Propose Installation of Drip Irrigation System and Rows of Orchard / Crop separated by access roads.

12. Estimated cost of works \$40,000.00

13. Estimated time required to construct works 4 years

If well completed, describe well.

14. Estimated time required to complete the application of water to beneficial use 2 years

15. Provide a detailed description of the proposed project and its water usage (use attachments if necessary): (Failure to provide a detailed description may cause a delay in processing.)

Installation of Drip Irrigation System and Rows of Orchard / Crop to be grown, separated by access roads. Property has Carson River Surface Water Rights on the Property. When Surface Water is available, surface water will be used to flood irrigate rows of proposed orchards/crop. Supplemental groundwater / drip lines will be utilized when surface water deliveries are not available. Proposed POD and POU is on property owned by the applicant. For additional information, please see "16. Miscellaneous remarks" section.

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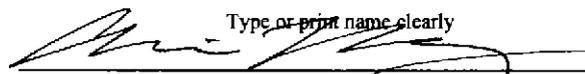
Please see attached Sheet(s).

RECEIVED
JUL 5 PM 2:03
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CLARK COUNTY

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E-mail Address
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Phone No. Ext.

Christopher G. Moltz, P.E., W.R.S.

Type or print name clearly



Signature, applicant or agent

Stanka Consulting, LTD

Company Name

3032 Silver Sage Drive, STE 101

Street Address or PO Box

Carson City, NV 89701

City, State, ZIP Code

APPLICATION MUST BE SIGNED
BY THE APPLICANT OR AGENT

16. Miscellaneous remarks:

Permit 70884 / Certificate 18922 and supplemental Permit 70883 / Certificate 18921, are both certificated underground water rights supplemental to West Fork Carson River Surface Water Rights. Both Permits / Certificates share a common POD and POU, as well as a total combined duty.

The existing place of use of Permit 70884 / Certificate 18922 is supplemental to Decreed West Fork Carson River Claim 603 water rights (Priority Date of 1858). The Proposed Place of Use is righted with Decreed West Fork Carson River Claim 569 water rights (Priority Date of 1862). Per initial discussions with Mike Randall of NDWR, an analysis of the historical use of the 1858 priority date water rights deliveries vs. 1862 priority date water rights deliveries would be required. Per initial discussions with Mike Randall, he suggested that I contact the Federal Watermaster to determine shutoff dates for 1858 Priority Date Water vs 1862 Priority Date Water, to see how much more water might be used in the new location.

On June 14, 2016, I spoke with Dave Watson of the Federal Watermaster (775-784-5241 Ext. 3). Here are some approximate numbers from Dave:

- Rotation Schedule for the Carson River starts the First Monday in June historically (by law). At this point you can expect all Carson River to go 100% to Nevada for one week, followed by one week of 100% of the water going to California (None going to Nevada), Then one week of 100% of the water to Nevada, and so on.
- If the West Fork of the Carson River has a 120 cfs flow, all 1858 priority dates can be met, and if there is a 150 cfs flow in the West Fork, all 1862 priority dates can be met.

Per this information from the Watermaster, the Historical USGS Hydrograph Flow Data for the USGS Gage 10310000 W Fork Carson River at Woodsfords, CA was used to determine likely historical cutoff dates based on Data from April 18, 2000 to April 17, 2016. **(First few pages of raw USGS data have been attached; however, document is 228 pages long and is too long to attach to this application. Full PDF of USGS download has previously been forwarded to Mike Randall, is available upon request.)** This data was downloaded as a daily average flow (in cfs) and copied into excel where it was analyzed. **(First few and last page(s) of excel analysis have been attached; however, document is almost 100 pages long and is too long to attach to this application. Excel spreadsheet of data analysis has previously been forwarded to Mike Randall, is available upon request.)**

From this data, the days with flows less than 150 cfs, but more than 120 cfs were identified as potential days where 1858 Priority Surface Water would require no supplemental groundwater, but 1862 Priority Surface Water would require supplemental groundwater. It was determined that on average (April 18, 2000 to April 17, 2016) there would be 11.73 days (rounded to 12 days), of additional groundwater pumping during the irrigation season for 1862 priority date property vs. 1862 priority date property. Please note that this analysis did not take into account the rotation schedule which occurs. If the rotation schedule was taken into account, it is expected the additional number of required days of groundwater irrigation for an 1862 priority date property would be reduced. Not taking into account the rotation schedule acts as a factor of safety in this analysis.

Using this information from discussions with Mike Randall of NDWR, Dave Watson of the Federal Watermaster, and engineering analysis of USGS Historical Hydrographs over the most recent 15 year period, a meeting was scheduled and held between State Engineer's Office and Stanka Consulting, LTD staff to verify this approach for moving groundwater supplemental to 1858 priority date surface water righted property, to 1862 priority date surface water righted property. This meeting was held on May 24, 2015 at the State Engineer's Office at 10:00am. In attendance were Mark Sivazlian, Mike Randall, and Kelvin Hickenbottom of the State Engineer's Office, along with Michael Stanka and Christopher Moltz of Stanka Consulting LTD. Per this meeting, the following was decided upon:

- Groundwater supplemental to 1858 West Fork Carson River Surface Water could be moved to a property with 1862 West Fork Carson River Surface Water, pending the acquisition of additional groundwater, and the relinquishment of that excess groundwater. Note that this is a case by case basis, and the close vicinity of the proposed POD from the existing POD was taken into account (less than a mile apart).
- Stanka Consulting Excel Analysis of daily USGS Hydrographic Data over the past 15 years was found to be sound. It was determined that the 12 days of extra irrigation divided by the 180 day irrigation season comes to 0.066667 or 6.6667% (rounded to 7%). This means that 107% of the requested water should be acquired, and then request that the additional 7% acquired be relinquished as part of the permit conditions. It was understood that not including rotation schedule in our analysis would act as a factor of safety.
- If Permit is granted, it was discussed how the PBU Map should be filed since it was expected that rows of trees or vines were to be installed, with substantial access roads in between roads. Per discussions with NDWR Staff, it is acceptable to submit a PBU with individual rows of crop surveyed when it's time to file a PBU.
- Substantial addendum should be attached to application explaining process (to be satisfied by this section).

It is expected that 3.43 acres of crop are to be irrigated within the proposed place of use.

Applicants request a 4.0 Acre-feet per acre duty for the irrigation of said 3.43 acres of crop. This comes to 13.72 acre-feet of water requested to be permitted. $13.72 \text{ acre-feet} * 107\% = 14.68 \text{ acre-feet}$ of water transferred to applicants. Request that state engineer removes 3.67 acres (14.68 acre-feet at a duty of 4.0 acre-feet per acre) from the existing place of use, and approves the placement of 3.43 acres (13.72 acre-feet at a duty of 4.0 acre-feet per acre) within the proposed place of use. The remaining 0.96 acre-feet of water is to be relinquished, and return back into the system.

Please note that Permit 70884 / Certificate 18922 and Permit 70883 / Certificate 18921 are supplemental to each other (both supplemental groundwater with a TCD term). Portions of both Permit 70884 / Certificate 18922 and Permit 70883 / Certificate 18921 transferred to the applicants share a common place of use and common point of diversion. Request that the State Engineer relinquish the entire portion of Permit 70883 / Certificate 18921 transferred to the applicants as a Permit condition for granting this change application to a portion of Permit 70884 / Certificate 18922.