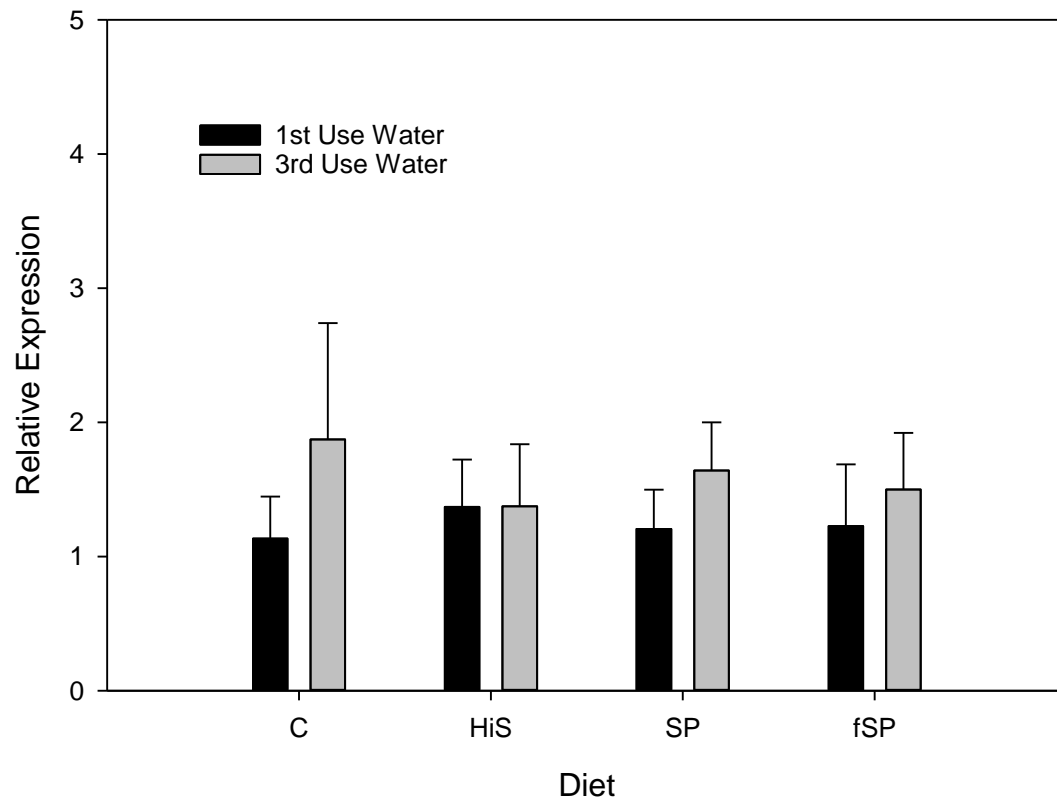
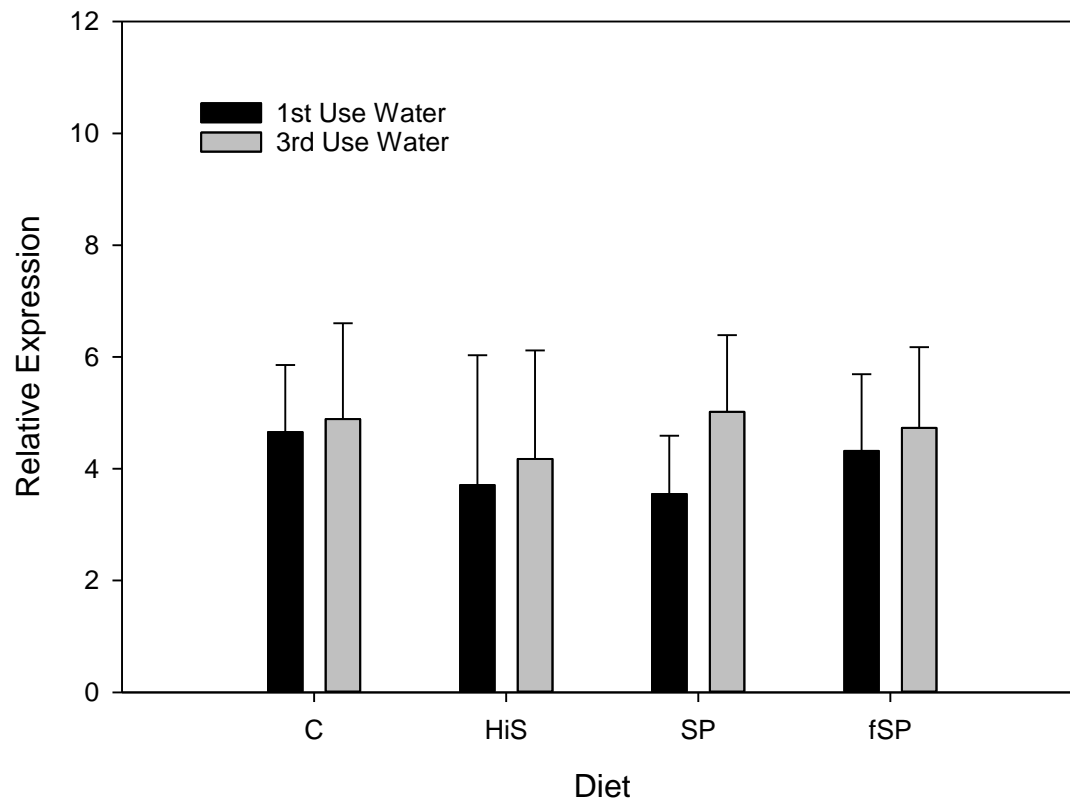


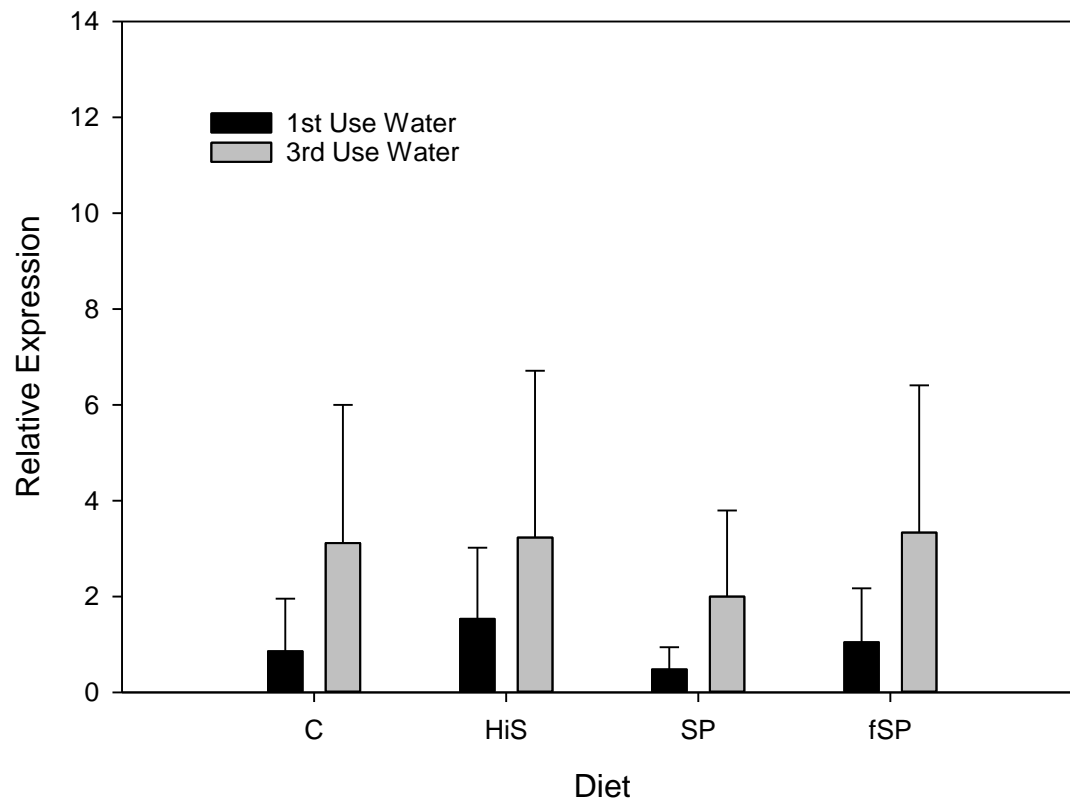
Supplementary Figures S1–S14



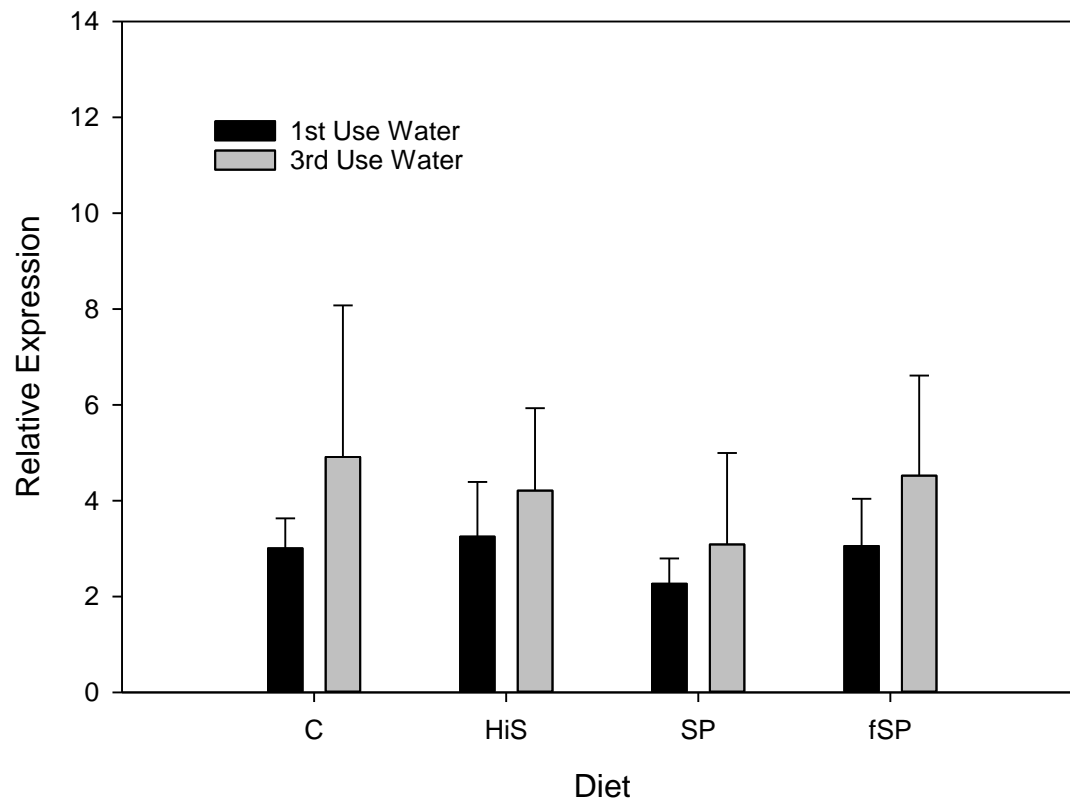
**Figure S1.** Relative expression (versus the reference gene,  $\beta$ -actin) of IRF-1 in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



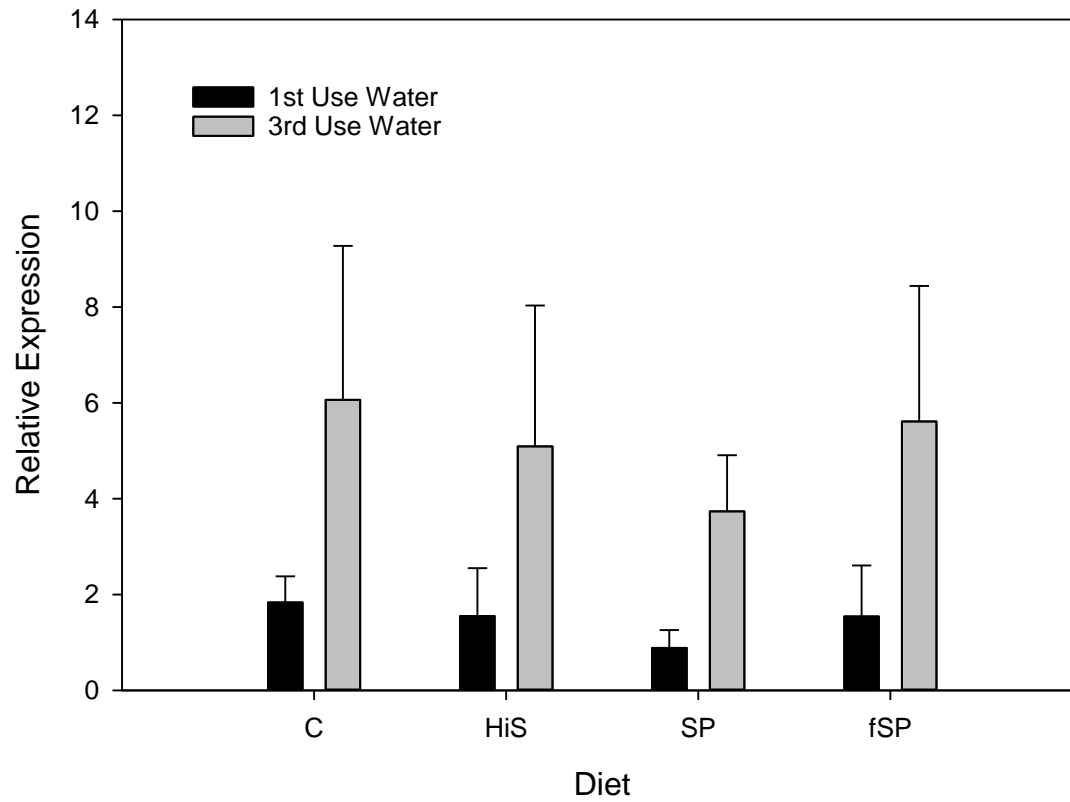
**Figure S2.** Relative expression (versus the reference gene,  $\beta$ -actin) of FK506BP2 in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



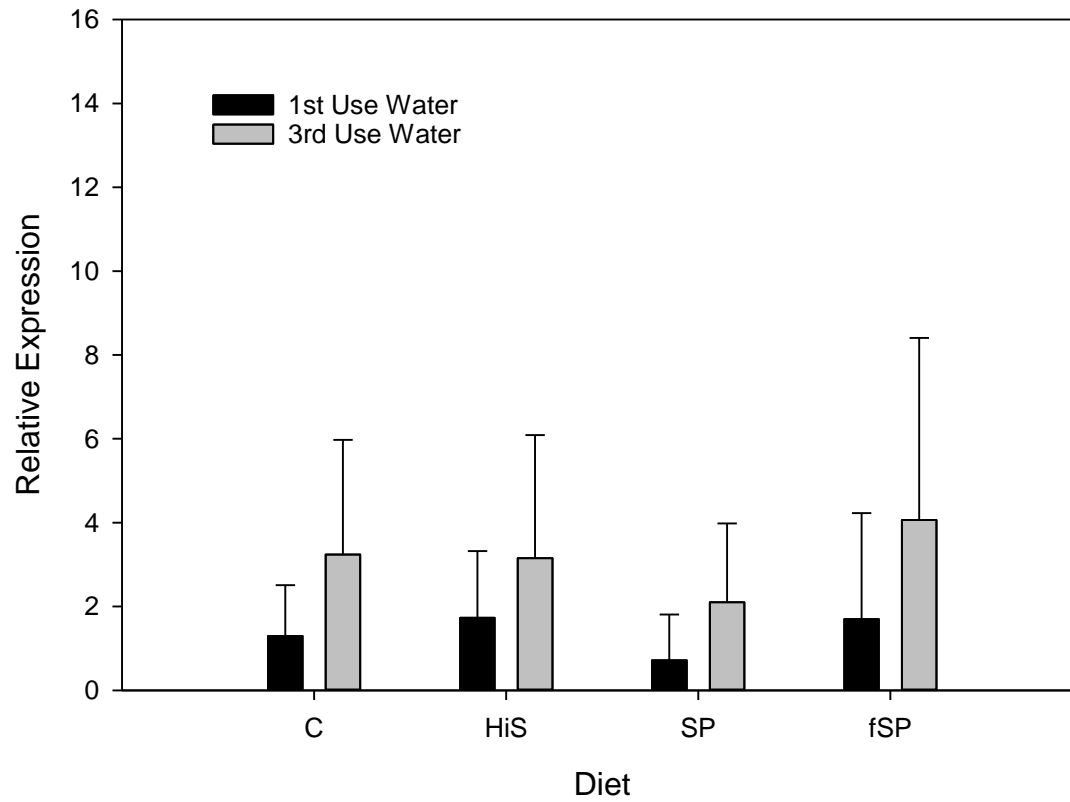
**Figure S3.** Relative expression (versus the reference gene,  $\beta$ -actin) of DIO2 in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



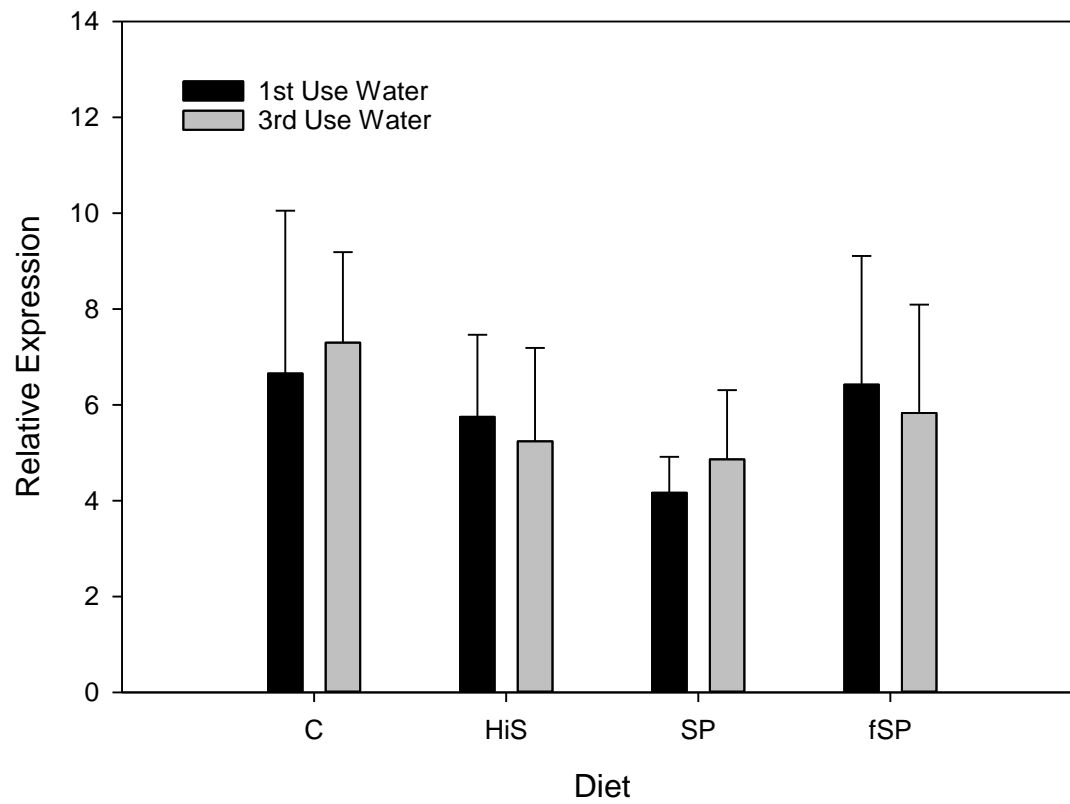
**Figure S4.** Relative expression (versus the reference gene,  $\beta$ -actin) of REGPS in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



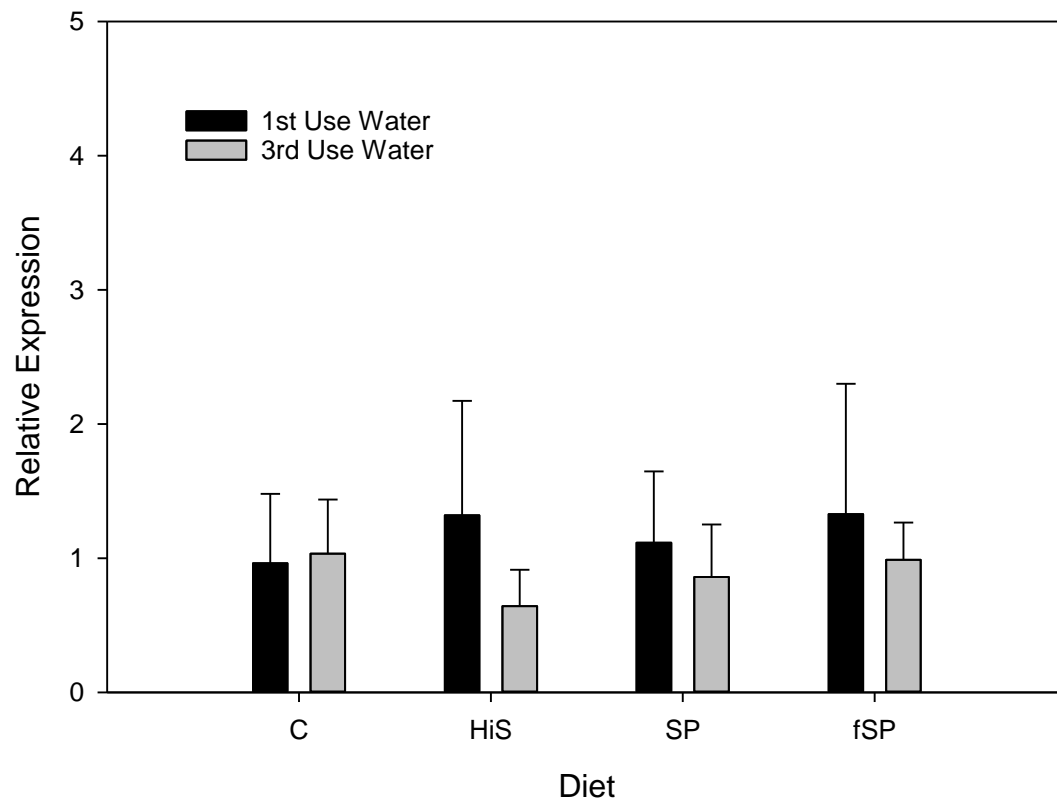
**Figure S5.** Relative expression (versus the reference gene,  $\beta$ -actin) of CYP1a in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



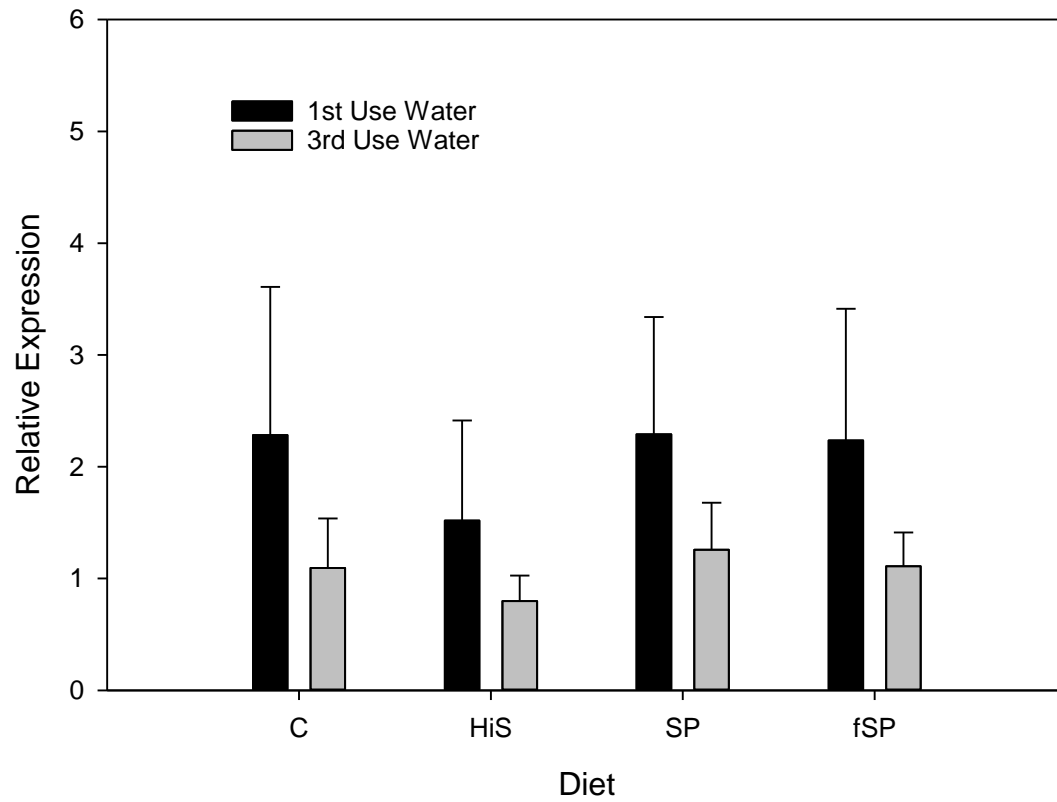
**Figure S6.** Relative expression (versus the reference gene,  $\beta$ -actin) of G6PH in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



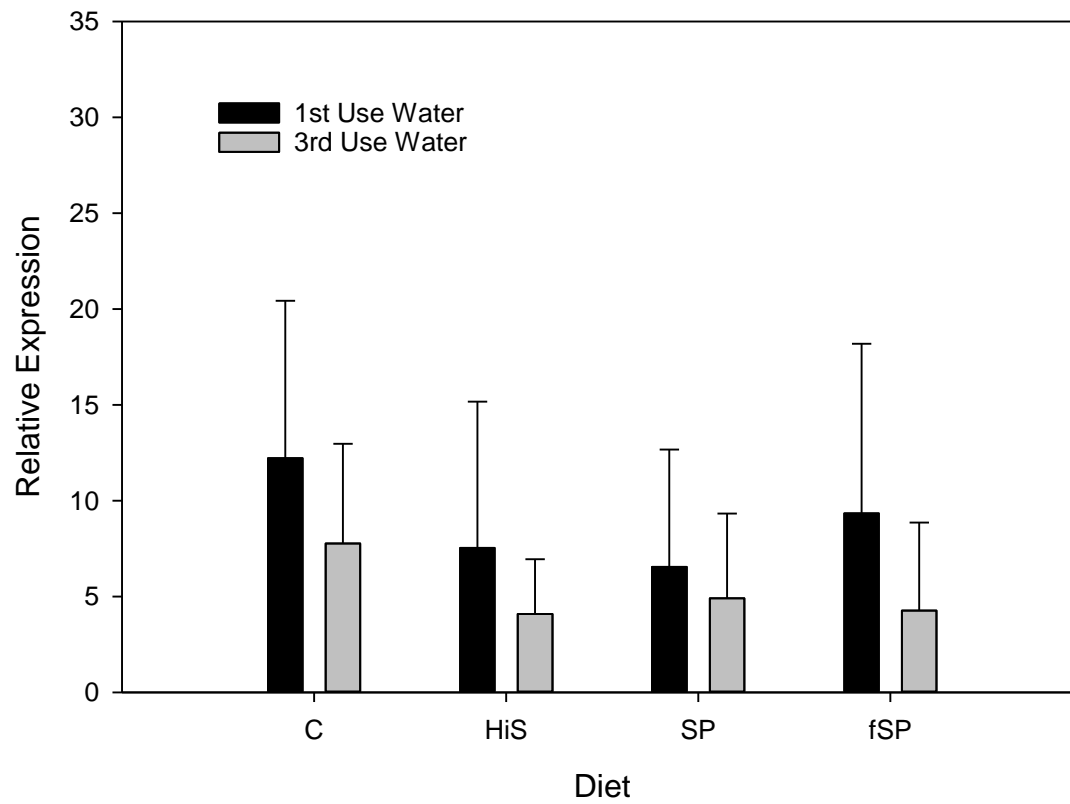
**Figure S7.** Relative expression (versus the reference gene,  $\beta$ -actin) of GADD45A in gill of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



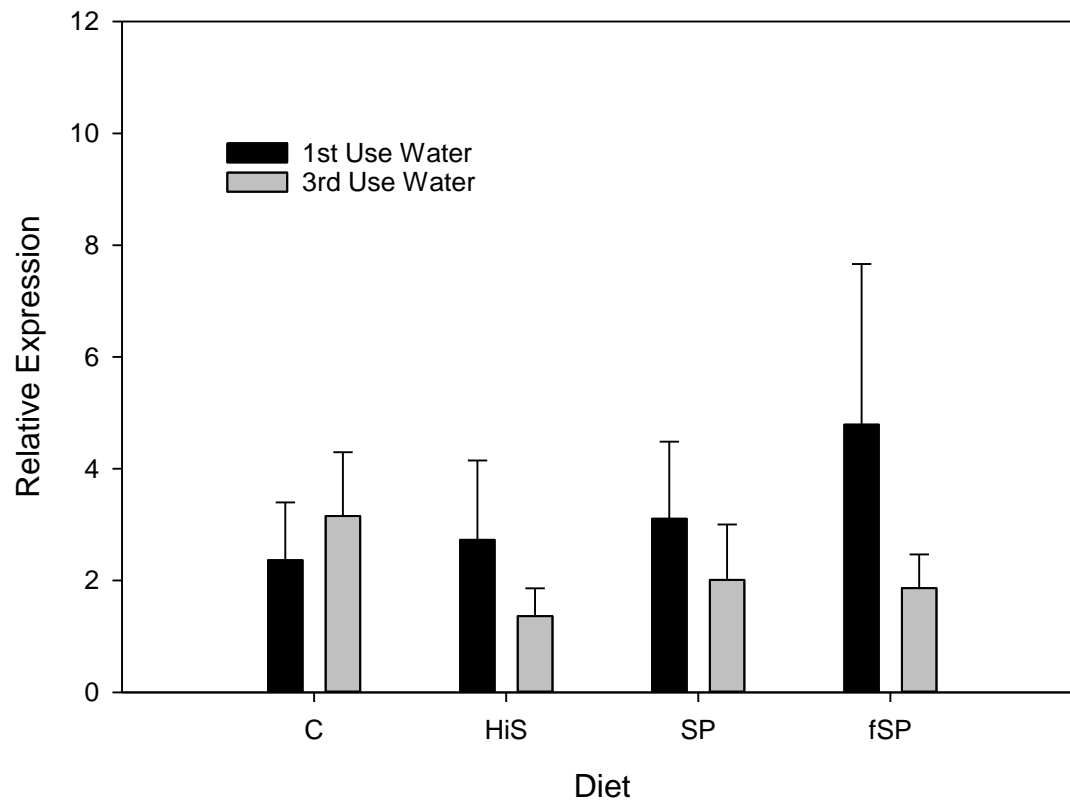
**Figure S8.** Relative expression (versus the reference gene,  $\beta$ -actin) of IRF-1 in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



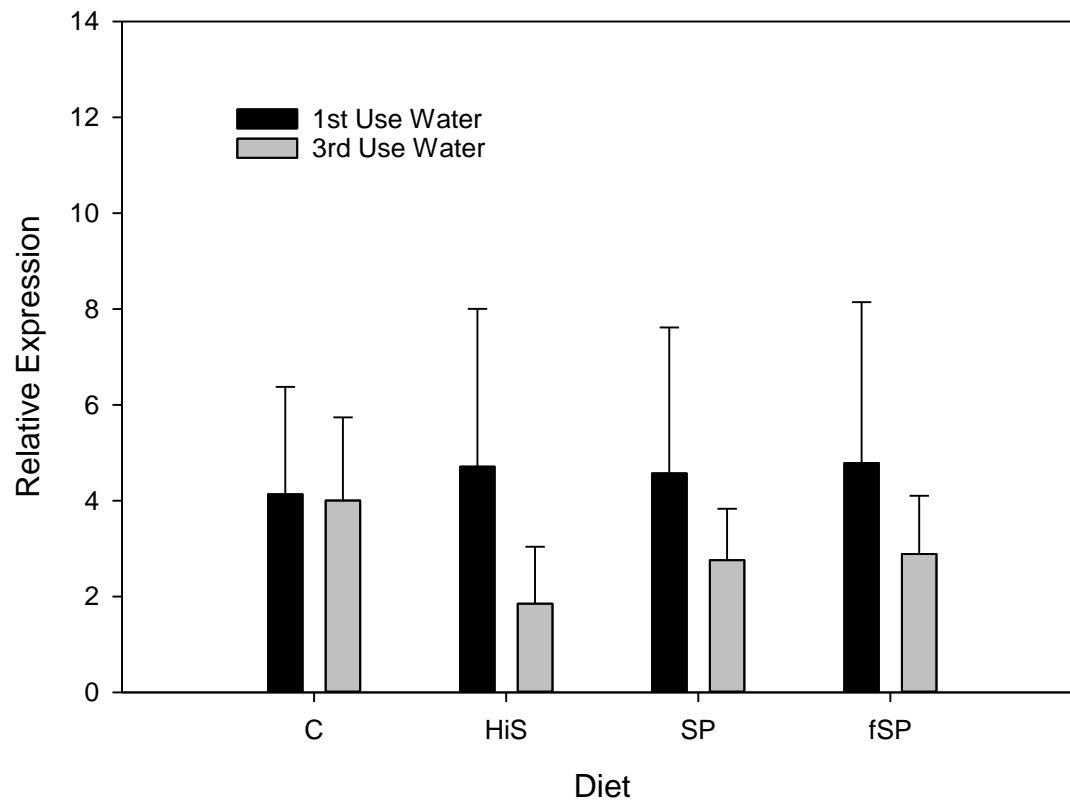
**Figure S9.** Relative expression (versus the reference gene,  $\beta$ -actin) of FK506BP2 in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



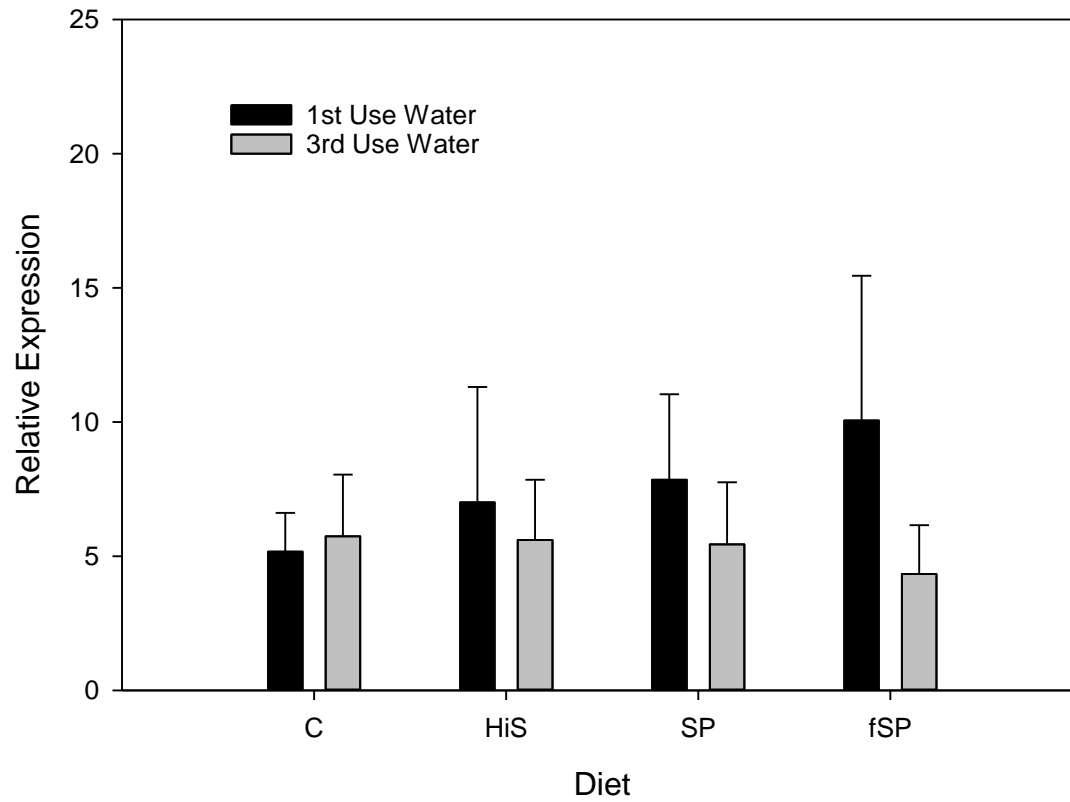
**Figure S10.** Relative expression (versus the reference gene,  $\beta$ -actin) of DIO2 in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



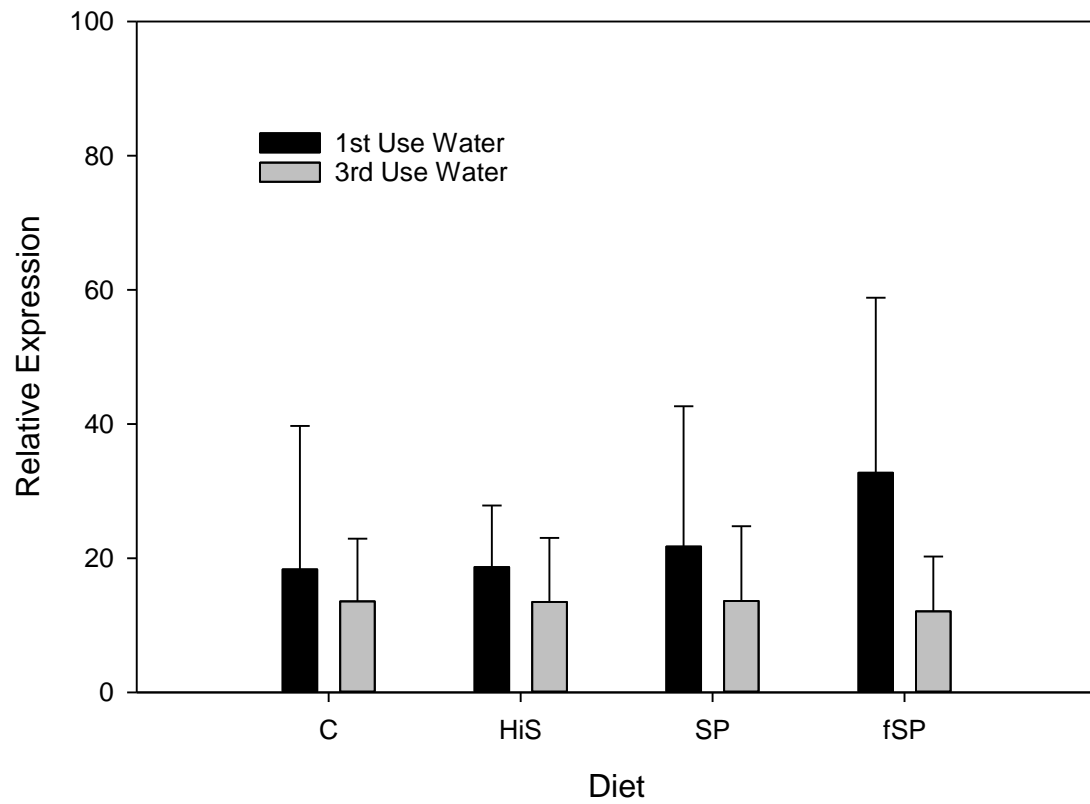
**Figure S11.** Relative expression (versus the reference gene,  $\beta$ -actin) of REGPS in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



**Figure S12.** Relative expression (versus the reference gene,  $\beta$ -actin) of CYP1a in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



**Figure S13.** Relative expression (versus the reference gene,  $\beta$ -actin) of G6PH in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.



**Figure S14.** Relative expression (versus the reference gene,  $\beta$ -actin) of GADD45A in liver of rainbow trout fed different experimental feeds and reared in 1<sup>st</sup> use or 3<sup>rd</sup> use water. C = fishmeal control; fSP = fermented soy protein concentrate; HiS = high soybean meal; SP = soy protein concentrate.