

**PRODUCTION WELL  
AND  
PRELIMINARY SURFACE WATER INFLUENCE  
ASSESSMENT**



**PREPARED FOR  
CITY OF QUESNEL  
BRITISH COLUMBIA**

**APRIL 17, 2012 DRAFT REPORT (REVISED)**

BC GROUNDWATER FILE NO. 09001.2



## **1.0 EXECUTIVE SUMMARY**

The City of Quesnel currently operates six production wells to meet all domestic and irrigation demands. Wells are distributed throughout the City adjacent to or near the rivers. Aquifer geology varies from unconfined alluvial sediments to confined glacial sediments. Wells are capable of significant production when first put into operation. About half of the operating wells are beyond original design life and the rate of well fouling can be severe making it challenging to meet demands, particularly during the summer months. The City works diligently to keep its well fleet in proper operating condition.

The oldest wells in the west region (PW3 and PW6) should be closed due to severe unrecoverable fouling and risk of recharge from surface water. Wells of moderate age in the west and north region (PW7 and PW8) are functioning properly and appear to be at considerably lower risk of surface water influence. PW10 in the north region is the newest well planned for commissioning this year. Testing information suggests it is at the lowest risk of surface water influence. The only operating well in the central region (PW9) presents a stable yield but it should be considered at risk of surface water influence until proven otherwise.

Several options are available over the long-term to maintain an adequate water supply. BC Groundwater recommends the City commence a regular well rehabilitation program with the primary focus being comprehensive re-development of PW7 in the short-term. In order to meet Maximum Day Demands and provide for redundancy (in the event of well breakdown) the City must undertake an Environmental Assessment to secure a certificate authorizing more intensive use of its existing wells. The City is extremely fortunate that it has wells capable of redundant operation at very high pumping rates as this is not the norm in BC. Additional wells should be considered to further improve redundancy in the short-term with a new well required by 2017 to maintain reasonable safety margins.