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December 21, 2004

AJB Investments Ltd.
216 – 545 Clyde Avenue
WEST VANCOUVER, B.C. V7T 1C5

Attention: Anthony Bing, Director of Operation

Subject: **Hydrogeological Issues Related to the Proposed AJB Sechelt Gravel Pit Project at Chapman Creek, North of Sechelt**
PHCL Reference A722101

Dear Sirs:

1.0 INTRODUCTION

This letter is further to recent discussions between you (Randall), P. Eng., of AW Randall Geological Engineering (AWRGE), and Ed. Livingston, P. Eng., of Pacific Hydrology Consultants Ltd. (PHCL). This letter is also in reply to your brief letter to PHCL dated September 10, 2004. We understand, from the letter and the public meeting on December 2, 2004, that local residents have concerns about potential hydrogeological impacts of the proposed gravel pit operation on Chapman Creek, which has been the main water source for the community of Sechelt for many years. As requested, this letter is intended to provide clarification of the hydrogeological issues relating to the proposed project. We understand that the situation is more or less as follows:

- The proposed AJB Sechelt gravel project is to be located on a property located east of Chapman Creek, northeast of the community of Sechelt; the property is legally described as D.L. 2461, New Westminster District.

- The proposed gravel project, which is known as Phase I, will only be operated in a 13-hectare area at the southern and south-eastern part of the property. The distance from the northern boundary of Phase I to Chapman Creek is about 250 m (820 ft).

- Outcropping bedrock is apparent at the bottom of the Creek valley and also locally on the sides of the valley; however, the actual bedrock depth below ground in the proposed pit area is unknown to us, but test pit digging shows that it is greater than 9 m (30 ft).

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- The present water intake for the Sechelt system is a short distance upstream from the nearest point of Phase I area of the proposed pit and certainly not in the path of flow of groundwater from the pit area. There is also an old intake no longer in use, but is maintained in case of emergency. It is reported to be located several hundreds meters downstream from the active intake.

- The water table at the proposed Phase I pit was found to be about 9 m (30 ft) below the ground surface in a test pit dug by an excavator.

- A very moderate quantity of gravel, compared to the main Sechelt gravel mining operations, is to be removed from the subject property; the maximum depth of the proposed pit operation is to be about 8 m (26 ft) for the entire area in Phase I.

- Previous logging has resulted in replacement of the original forest by second growth of trees. It is planned to log the forest in the Phase I area in stages as the gravel operation develops.

In preparation of this letter, we have used the following sources of information:

1. N.T.S. Map, 92G/5, **Sechelt**, of scale 1:50,000.

2. A copy of an "AJB Sechelt Gravel Project – Proposed Hydrology Study" letter from AW Randall Geological Engineering dated September 10, 2004, signed by Alf Randall, P. Eng.

3. A copy of Figure 2 dated June 2004, titled "AJB Investments Sechelt Gravel Pit – Schematic Mine Plan", of scale 1:5,000.

4. A copy of Figure 2a dated June 21, 2004, titled "AJB Investments Limited" showing the regional topography of the subject proposed quarry site, of scale 1:5,700.

5. A copy of Figure 3 dated June 2004, titled "AJB Investments Sechelt Gravel Pit – Schematic Mine Plan – Cross Sections", of scale of 1:5,000.

2.0 GEOLOGY AND SETTING

The visit to the area, along with topographic maps, shows that the proposed pit is located on a raised delta formed at the end of the last glacial event in the area, probably in the period 9,000 to 12,000 years before the present. At that time, relative sea level was much higher than at present and huge volumes of ice in the mountains were melting rapidly in summer months. Large streams of sediment-laden meltwater were flowing into the sea and were depositing deltas.

As the relative sea level declined (largely by the land rising) with several pauses, the meltwater streams cut down through the recently-deposited deltas to build new deltas which form the series of "steps", which we can see today. The proposed pit is apparently on the highest delta level in the Sechelt area.

3.0 DISCUSSION

The main concerns with respect to hydrogeologic impacts from the proposed gravel pit, as expressed repeatedly at the public meeting of December 2, 2004, are the protection of the Sechelt community water source, which is Chapman Creek. Specifically, the three matters of concern are the following:

- Impact of the gravel pit on the flow of Chapman Creek because of clearing of the forest in the area of the Phase I gravel pit.
- Silt from the pit getting into Chapman Creek
- Contamination of Chapman Creek from gravel pit activities

3.1 Impact of the Gravel Pit on the Flow of Chapman Creek

In the subject area, Chapman Creek acts as a drain for the local area; in other words, groundwater feeds the Creek. A significant reduction of groundwater recharge would reduce the flow of Chapman Creek.

The source of all groundwater in motion through the sediments is the portion of the precipitation that has percolated into the ground to be stored temporarily as soil moisture and, when the field capacity of the soil is reached, then moves down to the water table to become groundwater. In general, the amount of precipitation that enters the ground to become part of the groundwater flow regime varies from place to place depending mainly on the topography and infiltration conditions in the area. It is usually estimated to be in the range of 2% to 10% of the total yearly precipitation.

Under prevailing conditions, of the total precipitation that falls on the land surface, some runs off, some is lost to evaporation, some is lost through plant uptake and transpiration and a small portion recharges groundwater. The combined two losses to the atmosphere are usually called evapotranspiration. Due to the evapotranspiration during the summer growing season, which is also the time of low precipitation, almost no recharge to the groundwater regime occurs during

the growing season. Therefore, the main groundwater recharge period is usually considered to be from November to March. Initial precipitation after the start of the fall rains, must restore the soil moisture deficit from the summer drought before it can move down into the underlying unconsolidated sediments and fractured bedrock to join the groundwater flow regime.

Due to the fact that all the large and medium size vegetation and the thin forest soil in the pit area will be removed, the amount of precipitation which would be returned to the atmosphere by evapotranspiration will be very low; therefore, the infiltration in the area will be enhanced, and overall groundwater recharge volume will be increased by a small amount in the gravel pit area.

3.2 Silt Getting into Chapman Creek

It is our opinion that the likelihood of silt-bearing surface water runoff on the property flowing into Chapman Creek, is extremely low. The high permeability of the surficial sediments underlying the area will prevent precipitation from ponding or becoming surface runoff. As the pit workings are in a depression within a flat area, all surface runoff water including from compacted areas will automatically stay within the pit and infiltrate into the ground where is can be naturally filtered and recharged the groundwater system.

3.3 Contamination of Chapman Creek from Gravel Pit Activities

The sand and silt in the gravel under the pit area will provide natural filtration of recharge to the aquifer. However, due to the lack of a real confining layer over the aquifer, the gravel pit site is somewhat vulnerable to contamination. It is important that, within the immediate vicinity of Chapman Creek and in the pit area, activities that may cause groundwater contamination be avoided.

We understand that oil changes and/or equipment maintenance are not to be carried out in or near the pit area. The company (AJB Investments Ltd.) will also ensure that spill cleanup kits and proper cleanup procedures are available at the site in the event of spills from operation equipment. Petroleum products have a tendency to adsorb on fine sediments, making them difficult and expensive to remove once they have entered the groundwater regime. In the event stationary equipment, such as screening plant, is used on site, it is recommended that concrete pads or pans be placed under such equipment to catch any potential fluid leaks or spills.

4.0 RECOMMENDATIONS

The operation of the proposed pit should include provision for collection and disposal of refuse, particularly potential sources of contamination, such as old oil containers. The refuse should not be buried at the site, but should be taken to a proper disposal site.

The natural forest soil in the subject area is very thin because of the nature of the gravel and the fact that the time since the gravel was deposited is, in geologic time, very short, probably about 10,000 years. However, if possible during clearing of the Phase I pit area, the soil should be stockpiled for use in reclaiming the area when the pit is closed down.

5.0 CLOSURE

From our understanding and appraisal of the present hydrogeologic situation in the Chapman Creek watershed in the vicinity of this proposed gravel pit and the plan for operating this pit, we see no evidence that any significant impact on quantity or quality of groundwater or the water in Chapman Creek or the water supply of the Community of Sechelt, will result from proper operation of the proposed gravel pit. This letter is based on the geologic and hydrogeologic information provided to us and on generally accepted concepts of hydrogeology, along with a site visit to the proposed gravel pit and part of the surrounding area.

We trust that we have provided the information required at this time. Please do not hesitate to contact us for clarification or discussion of any aspect of the contents of this letter.

Yours truly,
PACIFIC HYDROLOGY CONSULTANTS LTD.

Ed Livingston

Ed Livingston, P. Eng.
Manager

cc. Mr. Alf Randall, P. Eng., AW Randall Geological Engineering Ltd.