

Appendix J – Peer Review Record



CATARAQUI REGION
CONSERVATION AUTHORITY

CATARAQUI SOURCE
PROTECTION AREA



DRINKING WATER SOURCE PROTECTION
WATER BUDGET
CONCEPTUAL REPORT
PEER REVIEW RECORD

October 29, 2009

Peer Review Record

for the

First Draft

Submitted April 7, 2006

COMMENT ID	SWP REGION	MEETING DATE	COMMENT DATE	SOURCE	OTHER	COMMENT	CATEGORY	APPLIES TO	PRIORITY	ACTION	ACTION DATE	ACTION DESCRIPTION
6		4/21/2006	4/21/2006	Meeting Minutes	Other	Use the Canadian Forest Service climate data mapping product across Eastern Ontario so consistency is maintained across the watersheds. This was mentioned at each of the first 3 meetings.	Climate	All	High	Completed	6/1/2006	Forestry Canada data has been obtained, and distributed for inclusion in the reports. This was completed and added to the report with the help of the new Hydrogeologist.
7		4/21/2006	4/21/2006	Meeting Minutes	Other	More groundwater and hydrogeology information is needed in the report.	Hydrogeology	Catarraqui	High	Completed	9/12/2006	This estimate has been found, and is being used.
8		4/21/2006	4/21/2006	Meeting Minutes	Other	At the conceptual stage, the water budget equation should be reconfigured as follows: Precipitation - Streamflow = Evapotranspiration, a basic equation, to see if it balances. This provides a very simple exploration of the data.	Water Use Hydrology	Catarraqui All	High	Completed	3/19/2006	The conceptual report will be restructured to take a step back from the draft document, which includes work that should be part of the Tier 1 document.
9		4/21/2006	4/21/2006	Meeting Minutes	Other	While statistical analysis is useful, they are used here with too little data to make it appropriate, or in the wrong way.	Other	Catarraqui	High	Completed	6/29/2006	This will be considered in the next draft of the report. Perhaps the more detailed statistics are only pertinent in the Tier 1 report. Instead, non-parametric statistics were used.
10		4/21/2006	4/21/2006	Meeting Minutes	Other	The definition of "Water Budget" should be found from a good text.	Other	Catarraqui	High	Completed	6/29/2006	Reference data for the uncertainty of various measurements used has been gathered for inclusion in the next version of the report.
11		4/21/2006	4/21/2006	Meeting Minutes	Other	The uncertainty of precipitation data (5 to 10%) should be noted and accounted for.	Climate	Catarraqui	High	Completed	7/20/2006	Reference data for the uncertainty of various measurements used has been gathered for inclusion in the next version of the report.
12		4/21/2006	4/21/2006	Meeting Minutes	Other	The term soil water holding capacity (SWHC) should be defined.	Hydrology	Catarraqui	High	Completed	4/24/2006	Reference data for the uncertainty of various measurements used has been gathered for inclusion in the next version of the report.
13		4/21/2006	4/21/2006	Meeting Minutes	Other	A possible relation between groundwater well levels and climate data (precipitation and snowmelt) should be explored. Possibly the YHGLD Wilton Creek report deals with this. In addition the geometry of the wells and geology around wells should be described. Recharge events may be found through this method.	Hydrogeology	Catarraqui	High	Completed	4/24/2006	Reference data for the uncertainty of various measurements used has been gathered for inclusion in the next version of the report.
14		4/21/2006	4/21/2006	Meeting Minutes	Other	At the conceptual budget stage, monthly values of data are not the goal, but rather annual values. The monthly values would be expected to come later.	Hydrogeology	Catarraqui	High	Completed	7/20/2006	This is included in the next version of the report.
15		4/21/2006	4/21/2006	Meeting Minutes	Other	Water course regulation does not factor into the annual water budget, as any plan evaporation data may be valuable to estimate lake evaporation and general ET values.	Hydrology	Catarraqui	High	Completed	7/14/2006	These graphs will be modified to include some precipitation data, where available, as well as possible inclusion of older MOE groundwater monitoring well data. This is essentially how the work was written, but may need to be clarified in the introduction section.
16		4/21/2006	4/21/2006	Meeting Minutes	Other	ET numbers appear too high, as there is excess water accounted for with these numbers (100 mm of extra water above precipitation value). This could be taken into account via uncertainty of the data.	Climate	Catarraqui	High	Completed	5/15/2006	The reference to regulation in the report has been changed to reflect this.
17		4/21/2006	4/21/2006	Meeting Minutes	Other	The precipitation values may be lower than actual due to undercatch at the gauges. For consideration of permitted (maximum) to actual ranges in P/TV, permitted values will give the worst case scenario.	Climate	Catarraqui	High	Completed	7/25/2006	The analysis has been included in the report.
18		4/21/2006	4/21/2006	Meeting Minutes	Other	More information is needed about groundwater. It is the largest source of water after the Great Lake system.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
19		4/21/2006	4/21/2006	Meeting Minutes	Other	The 2 CRCA groundwater studies do not mesh together. Work is needed to do this in Eastern Ontario.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
20		4/21/2006	4/21/2006	Meeting Minutes	Other	New water table and piezometric surfaces should be regenerated, possibly across the Great Lake system.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
21		4/21/2006	4/21/2006	Meeting Minutes	Other	Field season measurements should include low flows and water temperature, to help identify groundwater recharge areas.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
22		4/21/2006	4/21/2006	Meeting Minutes	Other	Are there data gasflags in the climate data?	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
23		4/21/2006	4/21/2006	Meeting Minutes	Other	Groundwater well graphs should include mention of the well number and location.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
24		4/21/2006	4/21/2006	Meeting Minutes	Other	The groundwater well graphs should have an x-axis related to date or month rather than just day of the year (i.e. Sept. 1 rather than Day 240).	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
25		4/21/2006	4/21/2006	Meeting Minutes	Other	More detail is needed on the hydrogeology. A list of the specific objectives of the conceptual water budget and how they fit into the overall objectives of the project should be included.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
26		4/19/2006	4/19/2006	Other	D Burr	The infiltration/recharge (IR) term does not apply in water budget equation as shown. It is included in the other terms.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
27		4/19/2006	4/19/2006	Other	D Burr	The objectives as listed are not met.	Climate	Catarraqui	High	Completed	5/15/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
28		5/2/2006	5/2/2006	D. Burr	M. Robin	The MOE guidance should be followed specifically, with the creation of all 26 recommended maps.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
29		4/27/2006	4/27/2006	D Burr	D Burr	There are difficulties in graphing the data properly on a time scale perspective without using day of the year. SigmaPlot may allow the mapping of point daily data with proper space between data points.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
30		5/2/2006	5/2/2006	D. Burr	D Burr	This work is in progress for the Catarraqui SWP Region for the 2008 field season, with the hope to continue in the 2007 field season. The work is noted in the report.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
31		5/2/2006	5/2/2006	D. Burr	D Burr	Yes, there are some. Essentially, any problems values from a monthly or annual perspective have been removed for the averaging analyses. The graphs are waterfall, and the maps show their locations.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
32		5/2/2006	5/2/2006	D. Burr	D Burr	There are difficulties in graphing the data properly on a time scale perspective without using day of the year. SigmaPlot may allow the mapping of point daily data with proper space between data points.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.
33		5/2/2006	5/2/2006	D. Burr	D Burr	This will be included in the next version of the report. This is true, it is really part of the streamflow or groundwater flow term. The objectives were re-examined, and those that could be met at the scale of the Conceptual report were met, the others will be met. The objectives as listed are not met.	Climate	Catarraqui	High	Completed	5/2/2006	The uncertainty of the data has been estimated, which could explain the 100 mm of missing water.

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34		1	5/2/2006	D. Burr	Urban areas have less evapotranspiration, therefore more precipitation is available for runoff, which helps to explain higher runoff values of the urban creeks.	Hydrology	Cataraqui	Medium	Completed	5/15/2006	The reference in the text has been changed to reflect this comment. Previously no correlation had been seen. This will be checked again via the Systat analysis to be completed on the rest of the data. There will be a strong correlation between flow and precipitation.
35		1	5/2/2006	D. Burr	One reviewer sees a correlation between high precipitation years and high flow and suggests that more precipitation means more streamflow, and needs to be checked.	Hydrology	Cataraqui	High	Completed	6/28/2006	This has been noted in more detail in the minutes from the June 16 2006 meeting. The difference is more in the use of BFI itself, rather than the term "Baseflow".
36		1	5/2/2006	D. Burr	There is a difference between how a hydrologist and hydrogeologist defines baseflow, this should be noted.	Hydrology	All	Medium	Completed	7/25/2006	This work is ongoing for the 2006 field season, and hopefully for the 2007 season. There is little to no historical information. The work is only not be needed for the Conceptual stage, but rather for future stages of the work.
37		1	5/2/2006	D. Burr	Low flow monitoring information should be included to identify losing and gaining For future conditions, full buildout according to the Official Plan could be assumed, and the water use could be recalculated.	Hydrology	Cataraqui	High	No Action Required	7/12/2006	This may be completed for the Tier 1 or 2 analyses, but for worst case scenarios, the maximum taking is probably the best assumption, as it is possible that takers will reach maximum during times of scarce water. Systat is taking from a surface source and releasing through septic systems.
38		1	5/2/2006	D. Burr	A survey of PTTW users can be used to quantify actual takings, as they may be much less than maximum permitted.	Water Use	All	Medium	No Action Required		This information has been added to the report.
39		1	5/2/2006	D. Burr	In communities with septic systems, that is water being added to the groundwater, especially important if the water came from a surface source.	Water Use	Cataraqui	Medium	Completed		Detailed evaluation across the watershed is planned to be part of Tier 1 work, at the Conceptual stage, general full watershed. Annual numbers were set out as the goal in the objectives.
40		1	5/2/2006	D. Burr	MNR has agricultural water use data at the Township or smaller level, which is better than PTTW data.	Water Use	All	High	Completed		The work is ongoing for the 2006 field season, and hopefully for the 2007 season. There is little to no historical information. The work is only not be needed for the Conceptual stage, but rather for future stages of the work.
41		1	5/2/2006	D. Burr	One reviewer would rather see precipitation, evapotranspiration, infiltration and runoff mapped spatially across the watershed rather than an estimate of bulk use across the watershed.	Other	Cataraqui	Medium	No Action Required	9/12/2006	This information has been added to the report.
42		1	5/2/2006	D. Burr	There is a "area of stress" in section 4, is there not enough information to map the stress, or is the stress not known?	Other	Cataraqui	High	Completed	7/20/2006	This work is ongoing for the 2006 field season, and hopefully for the 2007 season. There is little to no historical information. The work is only not be needed for the Conceptual stage, but rather for future stages of the work.
43		1	5/2/2006	D. Burr	The field work should include low flow monitoring, and monitoring for cold water streams.	Hydrology	Cataraqui	High	No Action Required	7/25/2006	This is done in conjunction with looking at the relation of climate data to the water levels.
44		1	5/2/2006	D. Burr	The water level trends at groundwater wells should be examined.	Hydrogeology	Cataraqui	High	Completed	7/14/2006	This is done in conjunction with looking at the relation of climate data to the water levels.
45		1	5/2/2006	M. Robn	There is not enough information in order to recommend modeling software or methods.	Other	Cataraqui	High	No Action Required		The conceptual model, it does not appear that enough analysis can be done to recommend modeling. This is expected to be a part of the Tier One work.
46		1	4/27/2006	M. Robn	The climate analysis is too detailed for the scope of the current objectives.	Climate	Cataraqui	High	Completed		The analysis as existed included work that would really be classified as Tier 1 work. The report will be worked to focus on the Conceptual work specifically, with the Tier 1 work being used in the Tier 1 report.
47		1	4/27/2006	M. Robn	Time series analysis of the climate data should be done to determine what time scale is best for the analysis. Systat can be used.	Climate	Cataraqui	High	Undecided	7/14/2006	This could be completed through Systat analysis of the data, however more information is needed on the method and reasoning. This may really be more necessary for the Tier One work.
48		1	4/27/2006	M. Robn	An ANOVA analysis is not necessarily the best option for statistical analysis of the data when there is high variability of the data, time series analysis is better.	Climate	Cataraqui	High	Completed	8/15/2006	These analyses were removed in favour of more practical methods.
49		1	4/27/2006	M. Robn	The confidence intervals, based on what systat shows, is not 95%, but 68%, that a spatial or temporal issue?	Other	Cataraqui	High	Completed	9/12/2006	This has been checked and corrected.
50		1	4/27/2006	M. Robn	The correlation of rain to precipitation is spurious, as one is part of the other.	Other	Cataraqui	Medium	No Action Required	8/15/2006	This statement, and the corresponding analyses have been removed.
51		1	4/27/2006	M. Robn	The correlation between rain and snow would be more interesting to see.	Climate	Cataraqui	Medium	Completed	6/28/2006	This will be modified.
52		1	4/27/2006	M. Robn	There is also a small spurious correlation between snow and precipitation.	Climate	Cataraqui	Medium	Completed	6/28/2006	This will be examined with the Systat analysis of the data.
53		1	4/27/2006	M. Robn	There is confusion with the statement of analysis of the temperature data using Anova analysis and standard error.	Climate	Cataraqui	Medium	Completed	6/28/2006	The correlation will be examined, and hopefully quantified using Systat.
54		1	4/27/2006	M. Robn	The text refers to the tests done by the local health units in septic systems tests as a t-test, is a percent-meant?	Other	Cataraqui	Medium	Completed	7/12/2006	The paragraph itself will need to be rewritten to clear up the confusion. Yes, percent is what is meant. The t-test term is also a reference to the same test for the rate at which water enters the soil where a septic system is planned.
55		1	4/27/2006	M. Robn	An infiltrometer tests for hydraulic conductivity (K) vs. water content, but not necessarily the infiltration. It is better to measure the average moisture content, where the K value would be approximately the dairy flux in steady state vertical	Hydrology	Cataraqui	Low	No Action Required	6/15/2006	Work relating to this comment may or may not need to be done, depending on whether it is decided to measure infiltration in the field or not.
56		1	4/27/2006	M. Robn	Regarding the correlation of precipitation to flow, it is recommended to show the correlation coefficients or regression data in order to test the hypothesis that they are not zero.	Hydrology	Cataraqui	Medium	Completed	7/25/2006	This work will be done with Systat analysis, and included in the next report.
57		1	4/27/2006	M. Robn							
58		1	4/27/2006	M. Robn							

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59		1	4/27/2006	M. Robin	Information on bedrock and surficial geology, soils and physiography are needed for the conceptual document.	Other	Gataraqui	Medium	Completed	5/1/2006	This work is part of the Watershed Characterization report, and will be referenced specifically in the water budget document, with some general descriptions as well.
60		1	4/21/2006	Meeting Minutes	At the conceptual water budget stage, there is probably no need to consider groundwater in and out of the watershed, as it should equal zero over the long term.	Other	All	High	Completed	7/12/2006	This is the way the work was intended to be written, and how the conceptual stage was considered. However, it did come to light during the review that the conceptual stage was not clearly structured to reflect this, with the additional work being transferred to the Tier 1 report.
61		1	4/21/2006	Meeting Minutes	Once precipitation minus streamflow is calculated, which represents derived evapotranspiration, it should be compared with the calculated evapotranspiration from Environment Canada. The uncertainty of the data should also be considered.	Other	All	High	Completed	5/1/2006	The derived ET is smaller than the calculated ET, but the consideration of uncertainty in the data can account for this discrepancy.

Peer Review Record

for the

Second Draft

Submitted September 15, 2006

COMMENT ID	SWP REGION	MEETING DATE	COMMENT DATE	SOURCE	COMMENT	CATEGORY	APPLIES TO	PRIORITY	ACTION	ACTION DATE	ACTION DESCRIPTION
1	Catarequi	25-Sep-06	16-Oct-06	L. Landraut, M. Other	Section 1.1: Page 1-5: the purpose of the Conceptual Guidance is not clearly stated	Other	Catarequi	High			Revise with reference to the Guidance
2	Catarequi	26-Sep-06	16-Oct-06	L. Landraut, M. Other	Section 1.1 MNR would like to see similar front and back end sections of the report in the Mississippi-Rideau and Catarequi reports	Other	All	High			Revise intro and conclusions, what about Quinle?
3	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 1.3: Page 45 – quote can be cut at detail of hydrologic circulation and production	Hydrology	Catarequi	High			Reduce quote length
4	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 1.3: Page 5 – quote too simplistic with regard to GW	Hydrogeology	Catarequi	High			Probably sufficient for conceptual budget, more detailed layout needed for Tier 1 work. Also depends on what is found with actual GW movement, whether it is GWIn = GWout or not.
5	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 1.3: Page 5 – clarification to the GWIn = GWout statement	Hydrogeology	Catarequi	High			M. Robn gave suggested wording
6	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Indicate the extent to which the assumptions are violated	Climate	Catarequi	Medium			Possible revision, if there is available data to support using other estimation techniques.
7	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 13 – add “asymmetric” in front of mean	Climate	Catarequi	Medium			Revise this review accordingly
8	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 16 – add “asymmetric” in front of mean	Climate	Catarequi	Medium			More detail on the test, and what it tests. Revise. Krukski/Wallis is a non-parametric test to establish whether multiple samples are from the same population.
9	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 16 – add “asymmetric” in front of mean	Climate	Catarequi	High			Look at time series analysis of the data. Also explain Mann-Kendall (non-parametric test for trend) in more detail.
10	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 17 – random sample tests are ill suited to time series data, should use time series tools	Climate	Catarequi	High			Revise with suggested modifications.
11	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 19 – add some text to sentence	Climate	Catarequi	High			Add column for “# of samples”
12	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 21 – Table 2.5 – include number of samples that went into	Climate	Catarequi	High			Suggested change
13	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 21 – Table 2.5 – change “interval” to “level”	Climate	Catarequi	Medium			Suggested change
14	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 22 – spatial correlation of climate is larger than area of region, this is why all seem to rise and fall at same years	Climate	Catarequi	Medium			
15	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.1: Page 22 – independence test better shown via time series analysis	Climate	Catarequi	High			Revise, with consultation with M. Robn.
16	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.2: Page 22 – independence test better shown via time series analysis	Climate	Catarequi	High			Revise, with consultation with M. Robn.
17	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.1.3: Page 22 – independence test better shown via time series analysis	Climate	Catarequi	High			Revise, with consultation with M. Robn.
18	Catarequi	26-Sep-06	21-Sep-06	E. Watt	Section 2.1.1.3: Include info on snow course stations of CRCA (7) and Rideau Canal (7)	Climate	Catarequi	High			Include a section on this data, how much, what is it good for, etc.
19	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.3: Page 25 – more detail is needed on what data is missing for other methods	Climate	Catarequi	High			Table of data needed and data not available?
20	Catarequi	26-Sep-06	25-Sep-06	E. Watt	Section 2.1.3: Add info on fact that other, newer, better estimates of ET are available, but were not used here, but could be used for future work	Climate	Catarequi	High			Revise as noted.
21	Catarequi	26-Sep-06	10-Oct-06	D. Burr	Section 2.1.3: Page 26 – bare rock should have low SWHC value	Hydrogeology	All	High			Use Quinle’s 25 mm? From Northern Ont HG report. HydroG’s prepare better estimation.
22	Catarequi	26-Sep-06	10-Oct-06	D. Burr	Section 2.1.3: Page 26 – add map of ET	Climate	Catarequi	High			Add map – maybe use SWHC map, and estimates of ET from direct relationship to SWHC? Like QC and M-R
23	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.3: Page 26 – more detail on MOE method, and where the numbers come from, how they are put together	Hydrogeology	Catarequi	Medium			Lock into original doc, and how it works. Possibly include methodology of method if it can be found.
24	Catarequi	26-Sep-06	S. Watt	Section 2.1.3: Add ET comparison maps and text about how they compare	Climate	Catarequi	Catarequi	High			Can we add soil thickness information?
25	Catarequi	26-Sep-06	S. Watt	Section 2.1.3: Change SWHC to County maps, redo calculations, add value for bare lands	Climate	Catarequi	Catarequi	High			Add info, and make mapping changes
26	Catarequi	26-Sep-06	21-Sep-06	E. Watt	Section 2.1.3: Page 28 – mention of sources of data – soil county maps, soil landscapes of Canada (SLC), change to county maps from SLC	Hydrogeology	Catarequi	High			
27	Catarequi	26-Sep-06	S. Watt	Section 2.1.3.1: Add Evap comparison maps and text about how they compare	Climate	Catarequi	Catarequi	High			
28	Catarequi	26-Sep-06	S. Watt	Section 2.1.3.1: Add Kempville and Ottawa data?	Climate	Catarequi	Catarequi	Medium			
29	Catarequi	26-Sep-06	21-Sep-06	E. Watt	Section 2.1.3.1: Page 32 – Use coefficients for pan evap to lake evap	Climate	Catarequi	High			Check and fix
30	Catarequi	26-Sep-06	25-Sep-06	D. Burr	Section 2.1.3.1: Page 32 – initiation detail of comparison with other methods	Hydrogeology	Catarequi	High			Revise text
31	Catarequi	26-Sep-06	25-Sep-06	M. Robn	Section 2.1.4: Page 32 – Re-examine MOE method, and how it has been used here, as well as whether it really applies here or not	Hydrogeology	All	Medium			Revisions for factors needed. Particularly bedrock.
32	Catarequi	26-Sep-06	26-Sep-06	S. Watt/PR Team	Section 2.1.4: Re-examine MOE method, and how it has been used here, as well as whether it really applies here or not	Hydrogeology	All	Medium			
33	Catarequi	26-Sep-06	16-Oct-06	L. Landraut, M. Gieraway, PR Team	Section 2.1.4: Page 35, Inf. Coeff. of 0.44 probably too high	Hydrogeology	Catarequi	High			Check factors to get to Inf. Coeff., make sure they are reasonable (bedrock in particular). Do back calculation from known numbers to get estimate for factors. Can we add soil thickness information?
34	Catarequi	26-Sep-06	10-Oct-06	D. Burr	Section 2.1.4: Page 33 – explain possible skew of data with classing data less much to one category, look for the general report use, and why, and whether it can actually be used the way we are using it.	Hydrogeology	Catarequi	High			Track down usage of report.
35	Catarequi	26-Sep-06	10-Oct-06	D. Burr	Section 2.1.4: Page 34 – How sensitive to analysis are class breaks? Each of 3 regions is different, should be the same.	Hydrogeology	Catarequi	High			Look at different breakdowns, how sensitive, breakdown into many classes, and add different groupings. Not sure whether we should all use the same breakdown, as we have differing slope characteristics. Maybe use equation of line (slope factor relationship) to do each pixel of the map.

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36	Catarraqui	25-Sep-06		S. Watt	Other	Hydrogeology	Catarraqui	High			
37	Catarraqui	26-Sep-06		S. Watt	Other	Hydrogeology	All	High			Re-examine method, and calculations, get copy of 1989 report, or what came before it. – maybe look at M&R and Quarte modifications and refer to BFI section, or provide more here
38	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	All	High			Not for Conceptual, but to be done for Tr1
39	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	All	Low			As suggested
40	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Climate	All	None			
41	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Low			
42	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	High			Modify coefficients
43	Catarraqui	26-Sep-06	25-Sep-06	S. Watt	Other	Hydrogeology	Catarraqui	Medium			Revise map.
44	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			
45	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Low			Look at more gauge data.
46	Catarraqui	26-Sep-06	25-Sep-06	S. Watt	Other	Hydrogeology	Catarraqui	Low			Lots of EO small streams seem about the same, 400 to 450
47	Catarraqui	26-Sep-06	25-Sep-06	S. Watt	Other	Hydrogeology	Catarraqui	Low			Run correlation and linear regression.
48	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			May be more than is needed for conceptual, in that annual data is not related, but smaller scale may be. Can also be done and shown.
49	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			Include cross-correlation work.
50	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			Redo analysis. Add autocorrelation and cross-correlation information.
51	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			Do analysis. Perhaps using auto-correlation function.
52	Catarraqui	26-Sep-06	25-Sep-06	S. Watt	Other	Hydrogeology	Catarraqui	High			Add information.
53	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Medium			
54	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Medium			But how do we get it? So far we have not been able to access it.
55	Catarraqui	26-Sep-06	25-Sep-06	S. Watt	Other	Hydrogeology	All	High			Revise map.
56	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	All	Medium			Do calculations.
57	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	Medium			Move to appendix. But use for calculations for storage.
58	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	High			Include this data, mostly completed.
59	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	High			Revise text. This is a barometric correction needed because the logger is sealed to outside pressure. The data as used for the report are already corrected.
60	Catarraqui	26-Sep-06	10-Oct-06	S. Watt	Other	Hydrogeology	Catarraqui	Medium			
61	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	All	Medium			
62	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Other	Catarraqui	Low			
63	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Medium			Li review. Look at vertical gradients in wells? Look at orientation of bedrock layers? Where is Li coming from, where does it go? Water table mapping?
64	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	None			Revise.
65	Catarraqui	26-Sep-06	25-Sep-06	M. Robm	M Robm	Hydrogeology	Catarraqui	High			
66	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	D Burr	Hydrogeology	Catarraqui	Medium			As suggested

COMMENT ID	SWP REGION	MEETING DATE	COMMENT DATE	SOURCE	COMMENT	CATEGORY	APPLIES TO	PRIORITY	ACTION	ACTION DATE	ACTION DESCRIPTION
65	Catarraqui	25-Sep-06	26-Sep-06	PR Team	Meeting Minutes	Hydrogeology	Catarraqui	Medium			
66	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.6.1.3: Include information on possible recharge from surface into bedrock units (Nespean in particular) Qualitative for now, quantitative for Tier 1	Hydrogeology	Catarraqui	Medium			Check. Revise accordingly.
67	Catarraqui	25-Sep-06	11-Oct-06	C. Hammond	Section 2.6.1.3: Info on Transmissivity as it applies to domestic supply?	Hydrogeology	Catarraqui	Medium			
69	Catarraqui	25-Sep-06	25-Sep-06	M. Robn	Section 2.6.2: Page 77 – Champelain Sea and Lake Irondquois maps not needed	Hydrogeology	Catarraqui	High			remove
71	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.6.2: Page 78 – mapping areas of shallow rock into 2D could use some more detail. There is thin drift over rock, this can then be used for SWHC and infiltration estimates	Hydrogeology	Catarraqui	High			
72	Catarraqui	26-Sep-06	21-Sep-06	E. Watt	Section 2.6.4: Page 87/88/89 – mention of sources of data – soil county maps, soil landscapes of Canada	Hydrogeology	Catarraqui	High			Add info
73	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.1: Page 93 – reference to volume of water available for withdrawal	Water Use	Catarraqui	High			Change wording of sentence. It is misleading
74	Catarraqui	26-Sep-06	26-Sep-06	M. Robn	Section 2.7.1: Page 93 – “regular” water well	Water Use	Catarraqui	High			Modify text
75	Catarraqui	26-Sep-06	26-Sep-06	S. Watt	Section 2.7.1: Page 93 – mention of DU and other one time tests that are not included in analysis, but are shown	Water Use	Catarraqui	High			
76	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 2.7.1: Shrink or Combine maps? Or move to appendix?	Water Use	Catarraqui	High			
77	Catarraqui	26-Sep-06	S. Watt	Section 2.7.1: Page 97 – Figure 2.35c – change legend numbers to refer to m3/day as noted, rather than L/day, as numbers show	Water Use	Catarraqui	High				Revise.
78	Catarraqui	26-Sep-06	S. Watt	Section 2.7.2: Page 98 – Table 2.23 – add Sandhurst lease data	Water Use	Catarraqui	High				
79	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.2: Page 98 – return of water to GW is generally near shorelines (LOSLEY)	Water Use	Catarraqui	High			
80	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 2.7.2.1: Combine water wells mapping? Or reduce size or number of maps?	Water Use	Catarraqui	High			
81	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.2.1: Page 101 – how was number of wells estimated	Water Use	Catarraqui	High			That is number of wells in the database
82	Catarraqui	26-Sep-06	S. Watt	Section 2.7.2.1: Page 101 – Add source data to first sentence (30,000 wells) and Table 2.24	Water Use	Catarraqui	High				
83	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.2.1: Page 101 – How was water use estimated – by number of wells, or by number of residences with a well?	Water Use	Catarraqui	High			By number of wells
84	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.2.1: Page 101 – surface water withdrawals that are then discharged to surface water body, so only a minimal increase in water table levels would be expected	Water Use	Catarraqui	High			Elaboration in text, to the effect of the comment, as well as that even though specific will probably only result in a localized water table drawdown change.
85	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.2.1: Page 102 – Figure 2.37 – are all dots a well? Are any missing? Note on map to confirm	Water Use	Catarraqui	High			Confirm
86	Catarraqui	26-Sep-06	S. Watt	Section 2.7.2.1: Move Figures 2.38a and 2.38b to Appendix	Water Use	Water Use	Catarraqui	High			
87	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 2.7.3: Combine maps?	Water Use	Catarraqui	High			Check.
88	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.3: Page 105 – are takings returned back to same water body?	Water Use	Catarraqui	High			
89	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 2.7.4: Combine maps?	Water Use	Catarraqui	High			
90	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 2.7.4: More detailed use data that was amalgamated for the report, could be used for Tier 1	Water Use	Catarraqui	None			
91	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 2.7.5: Page 109 – estimates on quaternary watershed basis?	Water Use	Catarraqui	Low			Uncertainty may actually be for individual sites, which has been extrapolated to watershed estimate.
92	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 3.1: Page 111 – comparing of MAP uncertainty to individual stations – why?	Climate	Catarraqui	Low			
93	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 3.1: Page 111 – same for flow as for precip	Hydrology	Catarraqui	Low			Check. Paper lists 0.5 to 1.5 degrees for temperature, and 20 to 40 % relative humidity.
94	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 3.1: Page 111 – land use and Physiography govern flow differences?	Hydrology	Catarraqui	Low			Check. Paper lists 0.5 to 1.5 degrees for temperature, and 20 to 40 % relative humidity.
95	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 3.1: Page 111 – Check McKinney paper for uncertainty	Climate	Catarraqui	Medium			Revise.
96	Catarraqui	26-Sep-06	26-Sep-06	PR Team	Section 3.1: Page 111 – use the term “uncertainty” instead of “error”	Climate	Catarraqui	High			Include.
97	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 3.1: Page 111 – comment on significance of correlation analysis	Other	Catarraqui	Low			Check.
98	Catarraqui	26-Sep-06	25-Sep-06	M. Robn	Section 3.1: Page 111 – confidence interval for uncertainties?	Other	Catarraqui	Low			Revise text
99	Catarraqui	26-Sep-06	25-Sep-06	M. Robn	Section 3.1: Page 111 – proper way to calc combined uncertainty – square root needed ET?	Other	Catarraqui	Low			Revise text with more details.
100	Catarraqui	26-Sep-06	26-Sep-06	M. Robn	Section 3.1: Page 112 – question about statement on uncertainty of other data	Other	Catarraqui	Low			
101	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 3.1: Page 112 – infiltration and runoff are greatest uncertainties, as disagree with arbitrary cutoff of 0.85, smaller could be significant too, recommend regression analysis instead	Other	Catarraqui	Medium			Revise. Include better estimation, maybe cross-correlation function.
102	Catarraqui	26-Sep-06	26-Sep-06	M. Robn	Section 3.2: Page 113 – comment on significance of correlation analysis	Other	Catarraqui	Medium			
103	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 4: Page 114 – term depth is misleading, perhaps use flux instead, then explain the terminology of flux as well, and units should be mm/y.	Other	Catarraqui	Medium			
104	Catarraqui	26-Sep-06	26-Sep-06	M. Robn	Section 4: Page 114 – why does Lake Evap get own tier? Already accounted in Section 4?	Climate	Catarraqui	Medium			Yes. It would be included in derived ET, but not necessarily in calculated ET.
105	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 4: Page 114 – where is GW discharge to streams in OUT table	Hydrogeology	Catarraqui	Medium			It is included in runoff, which is what is measured at the gauge.
106	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 4: Page 114 – GW out to Lake Ont and St. Lawrence can be estimated with hydraulic gradients and transmissivities	Hydrogeology	Catarraqui	Medium			To do for Tier 1, as conceptual assumes GWIn = GWOut, and is therefore not needed for the equation.
107	Catarraqui	26-Sep-06	10-Oct-06	D. Burr	Section 4: Page 114 – if SWHC is too high, ET will be too high, which may account for some discrepancy.	Hydrogeology	Catarraqui	Medium			Check. In particular, bare rock and bedrock SWHC, or areas where soil is so thick enough to hold amount of water estimated
108	Catarraqui	26-Sep-06	S. Watt	Section 4: Page 114 – if SWHC is too high, ET will be too high, which may account for some discrepancy.	Climate	Catarraqui	Medium				

COMMENT ID	SWP REGION	MEETING DATE	COMMENT DATE	SOURCE	COMMENT	CATEGORY	APPLIES TO	PRIORITY	ACTION	ACTION DATE	ACTION DESCRIPTION
109	Catawaqui	26-Sep-06	25-Sep-06	M. Robn	Section 4: Page 116 – Fig 4.1 – modify to 2 pieces, SW and GW, also make size of arrows correspond to volume of parameter, possibly include the figure (with no numbers) in Chapter 2 to show relations of parameters	Other	Catawaqui	Medium			Revise
110	Catawaqui	26-Sep-06	25-Sep-06	M. Robn	Section 4.1: Page 117 – important to note that GW storage is small, which is important to short term drought events, and could easily result in problems, and the area is high stress, and loading	Hydrogeology	Catawaqui	Medium			It comes from the recharge estimates (average of the 3) from section 2.1.4, page 35, converted to a watershed wide volume. Add info for where it comes from.
111	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 4.1: Page 117 – where does supply for GW come from? Not listed in Table 4.2	Hydrogeology	Catawaqui	High			Add info Yes, this is a worst case estimate.
112	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 4.1: Page 117 – include comment about GW returned after use	Hydrogeology	Catawaqui	High			Typo, 1.1% is used for the 1X estimate of the previous draft, 1.3% is used for this draft. The 1.1% is used for the 1X estimate of the demand used to solve the existing problem, while the 1.3% is used for the 1.1% used only the single value, and it should be revised to be 2.1%
113	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 4.1: Page 117 – ZX PPTV estimate is worst case scenario, could be left out	Water Use	Catawaqui	High			Phone surveys – Steph or Bitama? For Tier 1 work.
114	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 4.1: Page 117 – 1.1% vs. 1.3%	Water Use	Catawaqui	High			Revise to reflect specific guidance questions.
115	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 5: More empirical information on areas of stress should be included – municipalities, well drillers, water haulers, look at newspaper articles?	Hydrogeology	Catawaqui	High			
116	Catawaqui	26-Sep-06	16-Oct-06	L. Landraut, M. Garraway	Section 6: Page 119/120, tie section on areas that may need more modeling to screening questions in guidance modules	Other	All	Medium			
117	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 6: Page 119/120, tie section on areas that may need more modeling to screening questions in guidance modules	Water Use	Catawaqui	Medium			
118	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 7: Page 122 - Good to estimate gaining and losing streams with measurements	Hydrogeology	Catawaqui	Medium			
119	Catawaqui	26-Sep-06	10-Oct-06	S. Watt	Section 7: Add info about streams, dry, flowing, etc. which can be used to infer GW discharge.	Hydrogeology	Catawaqui	High			Add info.
120	Catawaqui	26-Sep-06	10-Oct-06	D. Burr	Section 9: Page 125 – VB impacts from land use etc. can't be met until better understanding of GW/SW interactions	Other	Catawaqui	Medium			
121	Catawaqui	26-Sep-06	25-Sep-06	M. Robn	Section 9: Page 125 – mention vulnerable aquifers as a problem due to low storage – conceptual analysis	Hydrogeology	Catawaqui	Medium			Revise.
122	Catawaqui	26-Sep-06	25-Sep-06	M. Robn	Section 9: Page 125 – sentence about model choice does not make sense	Other	Catawaqui	Medium			Revise.
123	Catawaqui	26-Sep-06	26-Sep-06	PR Team	Section 9: Better wrap-up structure, perhaps M-R type	Other	All	High			Revise with reference to other reports, what about Quinter?
124	Catawaqui	26-Sep-06	16-Oct-06	L. Landraut, M. Garraway	Section 9: MNR would like to see similar front and back end sections of the report in the Mississippi-Rideau and Catawaqui reports	Other	All	High			All watersheds will be done. Map is shown as Figure 1.1. Include map again here with specific reference, or refer back to original map.
125	Catawaqui	26-Sep-06	16-Oct-06	L. Landraut, M. Garraway	Section 9: Provide Map of subwatersheds that will be evaluated in Tier 1	Other	All	Low			