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1 December, 2017

TE161442 (**Sent via email**)

Mr. David Maguire
Sustainable Development, Planning & Impact Evaluation Branch
Department of Environment and Local Government
20 McGloin Street
PO Box 6000
Fredericton, NB E3B 5H1

Dear Mr. Maguire:

Re: FINAL – EIA Registration – Existing Water Supply, Sainte-Marie-Saint-Raphael DFO-SCH, NB

1.0 THE PROPONENT

- (i) *Name of Proponent:* Fisheries and Oceans Canada – Small Craft Harbours
Raymond Losier, Senior Project Engineer
- (i) *Address of Proponent:* 343 University Avenue
Moncton, NB E1C 9B6
Canada
- (ii) *Chief Executive Officer:* N/A
- (iii) *Principal Contact Person for Purposes of Environmental Impact Assessment (Consultant Contact):* Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited
Vernon Banks
495 Prospect Street, Suite 1
Fredericton, NB E3B 9M4
Canada
- (iv) *Property Ownership:* Government of Canada-Public Works

2.0 THE UNDERTAKING

- (i) *Name of Undertaking:* Water Supply Source Assessment (WSSA) – Existing Well, Sainte-Marie-Saint-Raphael, Fishers and Oceans Canada (DFO) Small Craft Harbour (SCH), New Brunswick (NB).

TE161442_Final_EIA_Registration_20171201

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(ii) *Project Overview:*

The undertaking is to gain approval for the development and use of a non-potable groundwater well for public use at the DFO-SCH in Sainte-Marie-Saint-Raphael, NB. The intended use of the water is for washing boats and other similar non-potable uses at the DFO-SCH. The well is currently installed and estimated by the Well Drillers (L.Breau) to have an estimated yield of approximately 90 gallons per minute (gpm) or approximately 490 cubic metres per day (m³/day). The intention is to gain approval for the well operation and intended use by:

- Submitting this Environmental Impact Assessment (EIA) Registration Document.
- Submitting an initial WSSA application.
- Completing a WSSA and report.
- Completing the Technical Review Committee (TRC) review process.
- Completing the public consultation process (Steps 1 to 4 and 8 of Appendix C of the Registration guide).

(iii) *Purpose /Rationale/Need for the Undertaking:*

The purpose of the undertaking is to apply to the Province of New Brunswick for an approval to operate an existing non-potable well at the DFO-SCH in Sainte-Marie-Saint-Raphael which has a capacity to supply more than 50 m³/day. The undertaking includes the completion of a WSSA Study and Registration of an EIA and required public engagement.

(iv) *Project Location:*

The project location is shown on Figure 1 (Attachment A) and is limited to the well site at the Sainte-Marie-Saint-Raphael DFO-SCH.

(v) *Siting Considerations:*

The existing well was already in place at the time of registration. It is assumed that the well was placed in proximity to the SCH and existing infrastructure since the intended use of the water for washing boats at the SCH.

(vi) *Physical Components and Dimensions of the Project:*

The attached Figure 1 (Attachment A) indicates the location of the existing well on the subject Property Identification Number (PID) 20110748. PID 20110748 is 5.53 hectares (ha) in size and is a rectangular parcel which is approximately 220 metres (m) wide and 270 m long. The site is host to the DFO SCH facility. Surrounding properties are as described in Table 1 and presented on Figure 1 (Attachment A).

Table 1 Physical Components of Project

| PID | Property Owner | Location with Respect to Subject Property |
|----------|--|---|
| 20110748 | Government of Canada – Public Works | Subject Property |
| 20763819 | Government of Canada – Public Works | south-east |
| 20185385 | Government of Canada – Public Works | south-west |
| 20546917 | Crown Canada | south-west |
| 20110888 | Government of Canada – Public Works | west |
| 20195590 | Government of Canada – Public Works | west |
| 20475810 | Government of Canada – Public Works | north-west |
| 20777546 | Belle-Ile Fisheries Pecheries Ltd/Ltee | north |

(vii) *Construction Details:*

There will be no construction completed as part of this undertaking.

(viii) *Operation and Maintenance Details:*

The existing groundwater well located on the subject property is planned to be the non-potable water supply for the DFO-SCH. The ground water well is planned to be used for boat washing or other similar non-potable purposes. The potential peak and anticipated production capacity of the existing well and installed pump as indicated by Crandall Engineering (Attachment B, Crandall 2017) was estimated to be 327 m³/day and close to 50 m³/day, respectively. It has also been anticipated that this potential peak production might only be utilized for a 1-2 hour period daily.

(ix) *Future Modifications, Extensions or Abandonment:*

No future modifications and or extensions/abandonments are planned for the existing water supply.

(x) *Project Related Documents:*

The documents currently available for review and included in Attachment B include:

1. Crandall Engineering Ltd. – Wharf Reconstruction – New Well Ste.-Marie-St.-Raphael, New Brunswick (16 June, 2016).
2. New Brunswick Department of Environment and Local Government (NBDELG) – Fisheries and Oceans Canada – Wharf Reconstruction – New Well- Ste.-Marie-St. – Raphael, NB (24 June, 2016).
3. Crandall Engineering Ltd. – Letter of Intent – New Well Wharf Reconstruction, Ste.-Marie-St.-Raphael, New Brunswick (7 July, 2017).
4. NBDELG – Fisheries and Oceans Canada – Wharf Reconstruction – New Well-Ste.-Marie-St. – Raphael, NB (21 July, 2017).
5. NBDELG – Well Drillers Report – 00022650 (18 May 2016).

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

(i) *Physical and Natural Features:*

The groundwater well on the subject property is located on the shore line of the Gulf of Saint Lawrence at an elevation of approximately 0 metres above sea level (masl). The drainage from the site is to the southeast and into the Gulf. There are no water courses and/or wetlands located on the subject property. The groundwater well on the subject property has been installed into the surficial soils and bedrock: mapped by Rampton (1984)¹ as blankets and plains: sand, silt, minor clay and gravel, patchy thin veneer of organic sediment; generally, 1 to 10 m thick, and New Brunswick Department of Natural Resources (NBDNR) (2008)² as Pictou Group Sediments (sandstones, siltstones and mudstones), respectively. All residential wells within a 500 m radius of the property are shown on Figure 1 (Attachment A).

A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was preformed on 6 Nov 2017. The ACCDC search results provided a list of rare/unique species (i.e. plants and animals) within a 5 km buffer zone (standard ACCDC procedure) of the site of the proposed work. All species were cross-referenced with Schedule 1 of the Species at Risk Act (SARA) listed as extirpated, endangered and threatened or of special concern. The melodus subspecies of piping plover (*Charadrius melodus melodus*), Canada warbler (*Wilsonia canadensis*), Eastern population harlequin duck (*Histrionicus histrionicus*) and Bald Eagle (*Haliaeetus leucocephalus*) were identified as species at risk.

(ii) *Cultural Features:*

The New Brunswick Department of Tourism Heritage and Culture (NBDTHC) mapping is indicates that there are no known cultural features on or adjacent to the subject site nor are there any known or recognized heritage resources and or areas on the subject and or adjacent properties.

(iii) *Existing and Historic Land Uses:*

The subject property is currently host to a public wharf and small craft harbour. The harbour is surrounded by crown and government lands as well as a commercial property. The site and the DFO-SCH site has recently undergone an upgrade and has not been identified by the DFO-SCH as a potentially contaminated site. A preliminary search of the subject property and surrounding properties has returned one land gazette record for petroleum storage. The result of the preliminary land gazette record search is presented in Table 2 below.

¹ Rampton V.N., R.C. Gauthier, J. Thibault and A.A. Seaman. 1984. Quaternary Geology of New Brunswick, Geological Survey of Canada, Memoir 416.

² New Brunswick Department of Natural Resources (NBDNR). 2008. Bedrock Geology of New Brunswick. Minerals, Policy and Planning Division. Map NR-1 (2008 Edition) Scale 1:500 000 (revised December 2008).

Table 2 Existing Land Use

| PID | Property Owner | Land Gazette Records |
|----------|--|-------------------------------|
| 20110748 | Government of Canada – Public Works | none |
| 20763819 | Government of Canada – Public Works | none |
| 20185385 | Government of Canada – Public Works | none |
| 20546917 | Crown Canada | none |
| 20110888 | Government of Canada – Public Works | none |
| 20195590 | Government of Canada – Public Works | none |
| 20475810 | Government of Canada – Public Works | none |
| 20777546 | Belle-Ile Fisheries Pecheries Ltd/Ltee | Petroleum Storage Site Report |

No land gazette records were returned for PID 20185385 (Attachment A) but dredged sediment, assumed to be from the SCH upgrades, was present on the property on 4 May 2016 and removed sometime before December 5th 2016 (Stantec 2016³ and EnGlobe 2017⁴). To assess the potential impacts, from the dredged material, potable groundwater samples were collected by Stantec Consulting Limited on 4 May 2016 from three locations adjacent to PID 20185385. Results of the analyses indicated that all petroleum hydrocarbon concentrations (PHC) were below the Canadian Drinking Water Quality Guidelines (CDWQG). Stantec also recommended subsequent sampling once the piles were removed. Englobe completed the follow up sampling of potable groundwater and subsurface soils once the pile was removed in December of 2016. With respect to groundwater the Englobe findings were consistent with past findings from Stantec (2016). With respect to soil only one exceedance of Canadian Council of the Ministers of the Environment (CCME) Soil Quality Guidelines (SQG) for the protection of Human and Environmental Health were observed.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

The intention of the undertaking is to gain approval for the well and intended use by:

- Submitting this EIA Registration Document.
- Submitting an initial Water Supply Source Assessment (WSSA) application.
- Completing a WSSA and Report.
- Completing the Technical Review Committee (TRC) review process.
- Completing the public consultation process (Steps 1 to 4 and 8 of Appendix C of the Registration guide).

³ Stantec Consulting Ltd. – Potable Water Sampling Results 1242, 1254, 1257 Boulevard de la Mer, Sainte-Marie-St-Raphael, NB (8 June 2016).

⁴ Englobe – Surface Soil and Potable Water Sampling Program, Sainte-Marie-Saint-Raphael, DFO SCH, NB, DRFP#04946 (17 Feb 2017).

As part of the WSSA process a 6-hour step test and 72-hour pumping test will be completed. During the pumping test, it is planned that water withdrawn from the groundwater well will be discharged into the harbour. This water is anticipated to be free of sediment, which is typical for groundwater pumping tests and have a temperature of approximately 8 degrees Celsius. Another consideration is the water quality of the groundwater under the pumping condition given its proximity to the shoreline. Depending on the geological conditions and the pumping rate there is the potential for pumping to promote salt water intrusion causing a change in water quality. However, the potential differences in the temperature and quality of the discharged water, compared to the harbour water, are not anticipated to cause impacts.

5.0 SUMMARY OF PROPOSED MITIGATION

The potential impacts resulting from the discharge of the pumping test waters will be mitigated by monitoring the discharge water during the pumping test. The potential water quality impacts from salt water intrusion will also be assessed during the WSSA process. By monitoring the quality of the water during the pumping test and the interaction of the pumping with nearby observation wells the potential impacts of the pumping and sustainable use of the well will be evaluated.

6.0 PUBLIC INVOLVEMENT

The planned level of public involvement will be consistent with that proposed by Crandall Engineering in their 16 June, 2017 letter (Attachment B) and accepted by NBDELG in their 24 June, 2017 response (Attachment B). The suggested and accepted approach is to complete Steps 1 to 4 and 8 of the minimum public involvement standards outlined in *Appendix C of EIA Registration Guide*.

7.0 APPROVAL OF THE UNDERTAKING

At present the approvals required to proceed with the undertaking are covered within the WSSA guidelines and involve the approval to complete the pumping test and discussions with local NBDELG inspectors and DFO harbour authorities concerning acceptable discharge of the pumping test water into the SCH.

8.0 FUNDING

Proponent funded.

9.0 SIGNATURE

1 December, 2017

Date

Vernon Banks

Signature of Principal Contact

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited

Prepared by:

Vernon Banks

Vernon Banks, M.Sc P.Geo.

Senior Hydrogeologist / Project Manager

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Reviewed by:

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VB/cjy

Cc: Pierre Doucette, NBDELG
Chyann Kirby, PSPC

Attachments:

Attachment A – Supporting Figure

Attachment B – Supporting Documents



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1 December, 2017

TE161442 (**Sent via email**)

Mr. David Maguire
New Brunswick Department of Environment and Local Government
Environmental Assessment Section
20 McGloin Street
PO Box 6000
Fredericton, NB E3B 5H1

Dear Mr. Maguire:

Re: FINAL – Initial Water Supply Source Assessment (WSSA) Application – Existing Water Supply, Sainte-Marie-Saint-Raphael DFO-SCH, NB

1. Name of Proponent:

Fisheries and Oceans Canada (DFO) – Small Craft Harbours (SCH)
Raymond Losier
Senior Project Engineer
343 University Avenue
Moncton, NB E1C 9B6
Canada

Consultant Contact:

Amec Foster Wheeler Environment & Infrastructure,
a Division of Amec Foster Wheeler Americas Limited
Vernon Banks
495 Prospect Street, Suite 1
Fredericton, NB E3B 9M4
Canada

2. Location of Drill Targets:

Figure 1 (Attachment A) indicates the subject property and location of the existing ground water well. There are no additional drilling targets on or planned for the subject site.

3. Required Water Quantity:

Based on the Crandall Engineering 7 July, 2017 letter to the New Brunswick Department of Environment and Local Government (NBDELG) (Attachment B) the estimated water demand for the DFO Small Craft Harbour (SCH) is approximately 50 cubic metres per day (m³/day) or slightly less. It should be noted that the water is intended to be used for non-potable purposes only.

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4. Alternate Water Supply Sources in Area:

There is no other source of groundwater available for the subject site in the area.

5. Hydrogeology:

The groundwater well on the subject property has been installed into the surficial soils and bedrock: mapped by Rampton (1984)¹ as blankets and plains: sand, silt, minor clay and gravel, patchy thin veneer of organic sediment; generally, 1 to 10 metres (m) thick, and New Brunswick Department of Natural Resources (NBDNR) (2008)² as Pictou Group Sediments (sandstones, siltstones and mudstones), respectively.

The well log provided indicated approximately 2.13 m of fill overlaying another 2.13 m of gravel. The logged stratigraphy of the well indicates alternating sequence of coarse, medium and fine grained brown sandstones to a depth of 23.16 m with the well completed on top of a brown shale unit. The provided well log is included in Attachment B. The drillers estimated yield was 90 gallons per minute (gpm) or approximately 490 cubic metres per day (m³/day).

6. Proposed Hydrogeological Work and Schedule:

Since the installation of the well has already been completed, the planned hydrogeological work will essentially follow the WSSA guidelines. The well is already fully equipped with a pump, flow meter and a means of controlling the pumping rate / discharge so the proposed plan is to complete a 6-hour step test and then the 72-hour pumping test. Water quality will be monitored during both tests with sample collection and analysis to be completed three times during the 72-hour test. With respect to the schedule of operations it is planned to complete the step and pumping test in December provided that a reasonable period can be established where recharge is minimal and would not influence the testing.

7. Existing Pollution or Contamination Hazards:

Based on a review of property usage, available information, and aerial mapping the properties located within 500 m of the installed well subject property are primarily residential with the exception of the two properties identified on Figure 1 (Attachment A) and described below in Table 1.

¹ Rampton V.N., R.C. Gauthier, J. Thibault and A.A. Seaman. 1984. Quaternary Geology of New Brunswick, Geological Survey of Canada, Memoir 416.

² New Brunswick Department of Natural Resources (NBDNR). 2008. Bedrock Geology of New Brunswick. Minerals, Policy and Planning Division. Map NR-1 (2008 Edition) Scale 1:500 000 (revised December 2008).

Table 1 Existing Pollution or Contamination Hazards

| PID | Property Owner | Description and Location | Land Gazette Information |
|----------|--|--|--------------------------|
| 20777546 | Belle-Ile Fisheries Pecheries Ltd/Ltee | Commercial seafood processing and packaging facility which is located adjacent to the subject property and approximately 60 m north of the well. | Yes (Petroleum Storage) |
| 20192159 | Village De Ste-Marie-St-Raphael | Commercial Restaurant located approximately 460 m north east of the well and subject property. | No |

No land gazette records were returned for PID 20185385 (Attachment A) but dredged sediment, assumed to be from the SCH upgrades, was present on the property on 4 May 2016 and removed sometime before December 5th 2016 (Stantec 2016³ and EnGlobe 2017⁴). To assess the potential impacts, from the dredged material, potable groundwater samples were collected by Stantec Consulting Limited on 4 May 2016 from three locations adjacent to PID 20185385. Results of the analyses indicated that all petroleum hydrocarbon concentrations (PHC) were below the Canadian Drinking Water Quality Guidelines (CDWQG). Stantec also recommended subsequent sampling once the piles were removed. Englobe completed the follow up sampling of potable groundwater and subsurface soils once the pile was removed in December of 2016. With respect to groundwater the Englobe findings were consistent with past findings from Stantec (2016). With respect to soil only one exceedance of Canadian Council of the Ministers of the Environment (CCME) Soil Quality Guidelines (SQG) for the protection of Human and Environmental Health were observed.

No site visits or interviews have been completed at this time.

8. Groundwater Issues in the Area:

There are no known groundwater issues (quality of quantity) in this region at present. Well log accessed online from a radius of 700 m around the subject property suggested sufficient quality and quantities of groundwater.

9. Watercourse(s) and Wetlands within 60 m of the Proposed Drill Targets:

There are no watercourses and or wetlands within 60 m of the currently installed well.

10. Identify Site Supervisory Personnel Involved in the Source Development (Municipal Officials, Consultants and Drillers):

The supervisory personnel involved in the source development are not identified in the currently available information. The drillers log on file indicate that L. Breau and sons of Neguac, NB were the licensed well drillers responsible for the well construction.

³ Stantec Consulting Ltd. – Potable Water Sampling Results 1242, 1254, 1257 Boulevard de la Mer, Sainte-Marie-St-Raphael, NB (8 June 2016).

⁴ Englobe – Surface Soil and Potable Water Sampling Program, Sainte-Marie-Saint-Raphael, DFO SCH, NB, DRFP#04946 (17 Feb 2017).

11. Mapping:

Figure 1 (Attachment A) presents the mapping for the application and includes a recent air photo. The following are identified:

- The subject and surrounding properties and Property Identification Numbers (PIDs).
- Domestic wells within 500 m of the existing well.
- The properties which represent potential existing pollution and or contamination hazards.

12. Zoning:

Figure 1 (Attachment A) also presents the zoning of the properties and the location of the existing well.

13. Contingency Plan for Open Loop Earth Energy Systems:

Not Applicable.

**Amec Foster Wheeler Environment & Infrastructure,
a Division of Amec Foster Wheeler Americas Limited**

Prepared by:

Reviewed by:



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Cc: Pierre Doucet, NBDELG
Chyann Kirby, PSPC

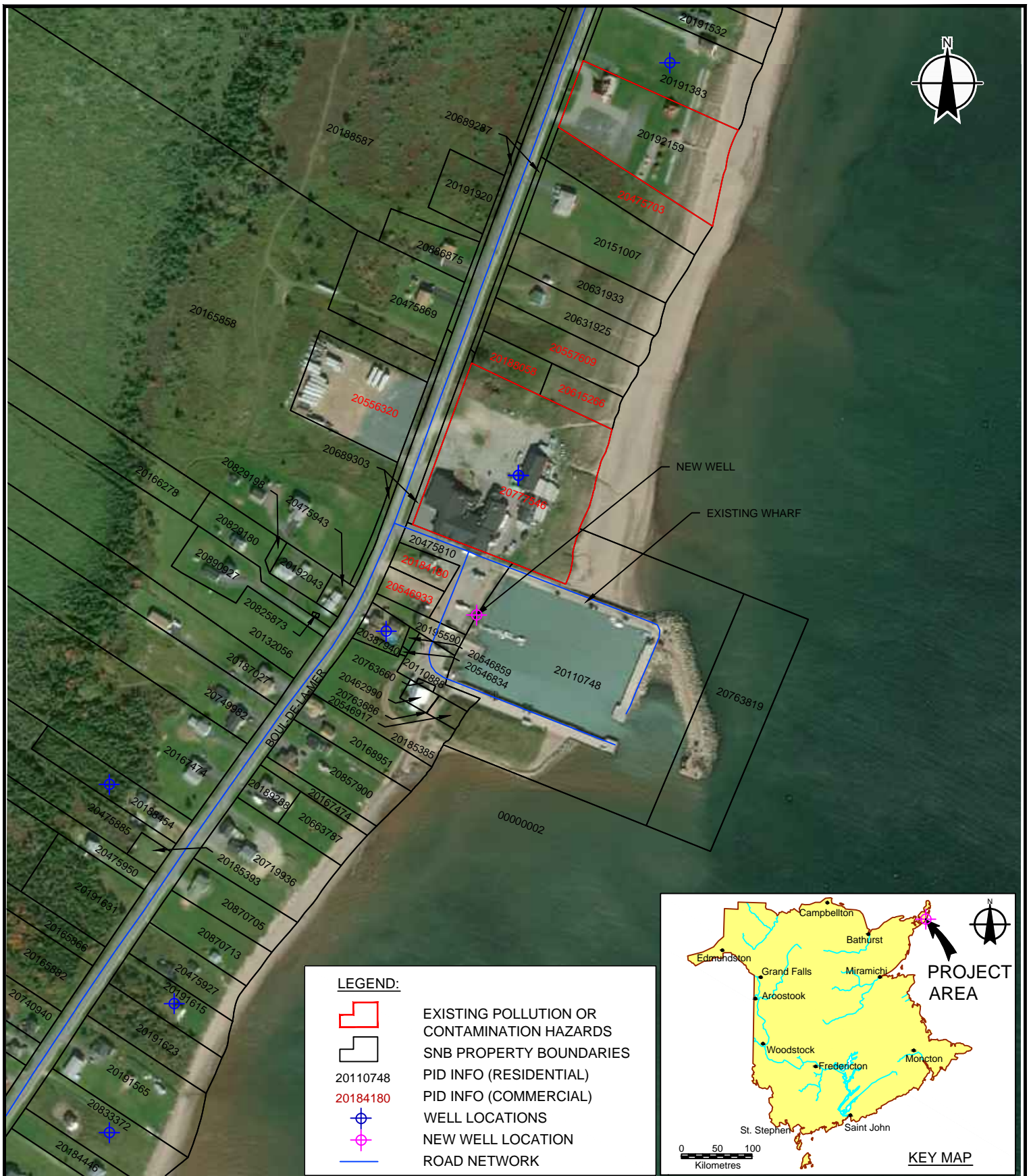
Attachments:

Attachment A – Supporting Figure






Attachment B – Supporting Documents

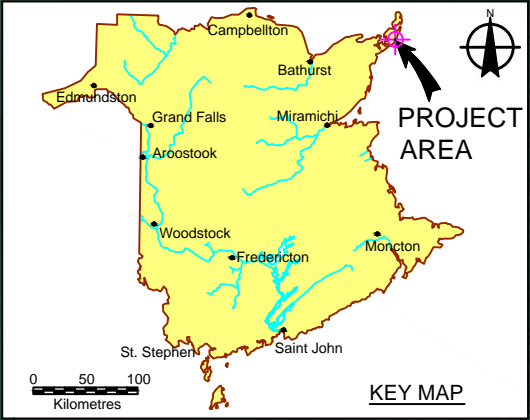




Attachment A
Figure



LEGEND:

-  EXISTING POLLUTION OR CONTAMINATION HAZARDS
-  SNB PROPERTY BOUNDARIES
- 20110748 PID INFO (RESIDENTIAL)
- 20184180 PID INFO (COMMERCIAL)
-  WELL LOCATIONS
-  NEW WELL LOCATION
-  ROAD NETWORK



| | | | | |
|--|---------------------------------|--|--------------------------------|---------------------------|
| CLIENT:  Public Works and Government Services Canada Travaux Publics et Services gouvernementaux Canada | SCALE: 1:4,500 | PROJECT: PSPC EIA REGISTRATION AND WSSA, SAINTE-MARIE-SAINTE-RAPHAEL | DWN BY: NA | DSGN'D BY: VB |
| | DATUM: NAD 83 (CSRS) | TITLE: EIA REGISTRATION | CHK'D BY: - | CHK'D (LEAD): - |
| PROJECTION: NB DOUBLE STEREOGRAPHIC | PROJECT NO.: TE161442 | | REV. DATE: 2017/12/1 | REV. NO.: 0 |
|  | | | FIGURE NO.: 1 | |



Attachment B
Supporting Documents



Crandall File: 15125-1
June 16, 2016

“SENT VIA E-MAIL”

NB Department of Environment & Local Government
P. O. Box 6000
Fredericton, NB
E3B 5H1

ATTENTION: Mr. David McGuire - Director, Project Assessment and Approvals Branch

Dear Sir:

**Wharf Reconstruction - New Well
Ste.-Marie-St.-Raphaël, New Brunswick**

As discussed with the NBDELG's Mr. Pierre Doucet, Fisheries and Oceans Canada has undertaken major upgrades at the Wharf in Sainte-Marie-Saint-Raphaël, N.B. The Work generally consists of the complete reconstruction of the wharf and the development of a non-potable water supply to the new wharf and existing facilities. The purpose of the new water supply is for use on the wharf, such as for washing boats.

At this time, construction of the new wharf is underway, and a new residential well has been drilled. At the time of drilling, it was intended to limit the well to less than 50 m³/day. Therefore, EIA Registration was not required at that time. However, based on the preliminary information available following drilling, it is believed that the well could sustain a substantially higher yield. Therefore, pending favorable pumping test results, the intent is now to use the well at roughly 30 to 60 USGPM (165 to 330 m³/day).

Based on Schedule A of the EIA Guide, it is understood that EIA Registration will now be required for this project. Therefore, the purpose of this letter is to establish the NBDELG's specific EIA requirements for this project.

Based on the location of the new well, which is adjacent to the existing wharf as shown on the attached drawing (Appendix A), we believe that there will not be a need to carry out detailed investigations or surveys relating to birds and habitats, wetlands and sensitive areas, or cultural / heritage impacts (archaeology). The existing land in this area is currently developed (wharf and related facilities); land use will not change as a result of this new well and clearing of trees will not be required.

Therefore, it is our understanding that the EIA will consist of the following major tasks:

- Submission of the EIA Registration document;
- Completion of the 72-hour pumping test;
- Submission of the Step 2 WSSA Report;
- Review process by the TRC;
- Public consultation (exact requirements to be confirmed by the NBDELG).

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Based on the Water Supply Source Assessment Guidelines, it is our understanding that since the new well will not be used as a municipal water source, only one (1) observation well will be required during the pumping test. However, at this time only one (1) well has been drilled. Therefore, it is proposed that an existing nearby well could be used for observation purposes, following landowner approval and confirmation that the NBDELG's requirements can be met (i.e. that the observation well will be located within the same hydrogeological unit as the pumping well and within the drawdown cone). Several alternatives have been identified based on the New Brunswick Online Well Log System, and indicated on the attached drawing (Appendix A).

In addition, because the well will be considered non-potable, it is proposed that in-depth water quality analysis not be carried out for this well. As a result, it is anticipated that the WSSA will focus on the identification of a long-term sustainable yield for the well, and potential interference with existing wells in the area.

Because the project is not considered to be a large scale project and the new well will serve only the Wharf, it is our understanding that only Steps 1 to 4 and Step 8 of Appendix C of the Registration Guide will be required for this project, and that newspaper advertisements and an open house will not be strictly required in this case.

We trust that the approach outlined above will be acceptable to the Department. Please do not hesitate to contact us should you require any additional information.

Yours very truly,

CRANDALL ENGINEERING LTD.

Pierre Plourde, P.Eng.
Partner

- C. Mr. Pierre Doucet, Project Manager - NBDELG
Mr. Jean Girouard - Project Manager - PWGSC
Mr. Raymond Losier - Senior Project Engineer - Fisheries and Oceans Canada
Mr. Stéphane Savoie, P. Eng., Project Engineer - Crandall Engineering Ltd.

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CRANDALLENGINEERING.CA



Appendix A - Well Location Plan

Crandall Engineering Ltd.

1077 boul. St. George Blvd.
Suite 400
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CRANDALLENGINEERING.CA



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NOTES

LEGEND

- EXISTING WELL LOCATIONS (APPROXIMATE)
- NEW WELL LOCATION (APPROXIMATE)
- RWM-30m BUFFER ZONE
- REGULATED WETLAND MAP (RWM)

| | | | | |
|-----|-----------|--------------------------|-----|-------|
| 00 | JUNE 9/16 | ISSUED FOR NBDELG REVIEW | DWD | LEL |
| NO. | DATE | REVISIONS | BY | APPR. |



PROJECT TITLE
**WHARF RECONSTRUCTION
STE.-MARIE-ST.-RAPHAEL**

LOCATION N.B.

DRAWING TITLE
**WELL LOCATION
PLAN**

| | | |
|-----------|------------|------------|
| Scale | Drawn By | Design By |
| | DWD | --- |
| | Checked By | Cadd Check |
| | LEL | --- |
| | Sheet | 1 of 1 |

File Name
15125-1P-C01.DWG

Drawing No.
15125-1P-C01



June 24, 2016

Pierre Plourde, P.Eng.
Crandall Engineering Ltd.
1077 St. George Boulevard
Suite 400
Moncton, NB
E1E 4C9

Mr. Plourde,

RE: Fisheries and Oceans Canada – Wharf Reconstruction – New Well – Ste.-Marie-St.-Raphaël, NB

The Department of Environment and Local Government's (DELG) Environmental Assessment Section has reviewed Crandall Engineering Ltd.'s recent submission (dated June 16, 2016) regarding the above-mentioned project. As indicated, an environmental impact assessment (EIA) registration is required for the proposed use of the well. It is DELG's position that the maintenance activity/wharf reconstruction work is outside the scope of the EIA review.


DELG also agrees with Crandall Engineering Ltd's proposed submission list, although in addition to an EIA registration document, a Water Supply Source Assessment (WSSA) Initial Application should also be completed and submitted, and approval must be granted by DELG prior to the completion of the pumping test. The WSSA Initial Application should include details justifying the proposed use of a neighbouring well as an observation well, and it should also include details about the proposed water quality sampling. Please note that a minimum of at least one water quality sample will be required. Additional information on the WSSA Process and the Initial Application can be found in the WSSA Guidelines, which are available online here: <http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/EIA-EIE/WaterSupplyAssessmentGuidelines.pdf>.

Given the limited scope of the project, DELG also accepts the proposed level of public involvement activities described in the June 16, 2016 submission. Please note that at a minimum, adjacent landowners will need to be notified of the project and given an opportunity to consult project information and offer comments on the project.



If you have any questions, feel free to contact Pierre Doucet at (506) 457-6757, or by fax at (506) 453-2627, or by email at pierre.doucet@gnb.ca.

Sincerely,

A handwritten signature in black ink, appearing to read "David M.", followed by a long horizontal line extending to the right.

David Maguire
Manager, Environmental Assessment Section

C: Jean Girouard – Public Works and Government Services Canada
Raymond Losier – Fisheries and Oceans Canada
Stéphane Savoie, P.Eng. – Crandall Engineering Ltd.
Pierre Doucet – Department of Environment and Local Government



Crandall File: 15125-1
July 7, 2017

“SENT VIA E-MAIL”

NB Department of Environment & Local Government
P. O. Box 6000
Fredericton, NB
E3B 5H1

ATTENTION: Mr. David Maguire - Manager, Environmental Assessment Section

Dear Sir:

**Letter of Intent - New Well
Wharf Reconstruction
Ste.-Marie-St.-Raphaël, New Brunswick**

Further to our letter of June 16, 2016, Crandall is pleased to provide the Department with the following update on the Sainte-Marie-Saint-Raphaël Wharf re-construction project.

As previously noted, Fisheries and Oceans Canada has recently undertaken major upgrades to re-construct the Wharf in Sainte-Marie-Saint-Raphaël, N.B. As part of the Work, a new non-potable well has been drilled, with the intent of being used for washing boats or other similar purposes.

At this time, a new 3.8 l/s (60 USgpm) well pump has been installed in the new well based on the anticipated peak use of the well. However, it is noted that it is not foreseen that the well will experience its peak usage on a long-term basis. Therefore, the purpose of this letter is to provide the Department with additional details on the intended use of the new water source.

Based on information provided by Fisheries and Oceans Canada, the wharf is open from mid-April to early November each year, with its heaviest use typically occurring during the lobster and herring seasons (typically occurring in May/June and August/September, respectively). At this time, there are close to 30 boats routinely using the wharf. Based on typical use, it is estimated that fishing boats typically make one (1) run per day, with several boats making a second run during peak times. Therefore, it could be estimated that a reasonable worst-case scenario would be based on each boat doing one (1) 30-minute wash-down per day, with some boats requiring water a second time.

Based on the current construction progress, it is anticipated that the wharf upgrades will be completed in late August 2017. Once complete, the upgraded wharf will include five (5) new water connection points for boats at the wharf to use, each having a capacity of roughly 10 USgpm (0.6 l/s), as well as a hose bibb on the new electrical/mechanical building building with a capacity of roughly 5 USgpm (0.3 l/s). Based on this, the



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instantaneous well pumping rate could be close to 60 USgpm (330m³/day) if all are used simultaneously.

Therefore, using a peak flow of 60 USgpm (330 m³/day) and 1-2 wash-downs per day per boat, it is anticipated that the total daily withdrawal from the well during the wharf's peak season would be close to 50m³. During lower-use periods, water usage at the wharf is expected to be lower. In addition, as noted above, it is expected that there would be little to no withdrawal for roughly one third of the year.

At this time, there is not a flow meter installed to monitor the well withdrawal; however, if required, a flow meter could be added to the facility in order to monitor the well's daily production.

Based on the information described above, it is not foreseen that an EIA registration will be required at this time. However, it is understood that EIA Registration may be required in the future if the operation of the facility changes such that the daily water demand is greater than 50m³/day. Based on this, it is proposed that testing/monitoring be carried out once the construction is complete, to confirm the actual well usage.

We trust that the details outlined above will be acceptable to the Department. Please do not hesitate to contact us should you require any additional information.

Yours very truly,

CRANDALL ENGINEERING LTD.

Pierre Plourde, P.Eng.
Partner

Laura Leger, P.Eng.
Project Engineer

- C. Mr. Pierre Doucet, Project Manager - NBDELG
Mr. Jean Girouard - Project Manager - PWGSC
Mr. Raymond Losier - Senior Project Engineer - Fisheries and Oceans Canada
Mr. Stéphane Savoie, P. Eng., Project Engineer - Crandall Engineering Ltd.

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July 21, 2017

Pierre Plourde, P.Eng.
Laura Leger, P.Eng
Crandall Engineering Ltd.
1077 St. George Boulevard
Suite 400
Moncton, NB
E1E 4C9

Mr. Plourde and Ms. Leger,

RE: Fisheries and Oceans Canada – Wharf Reconstruction – New Well – Ste.-Marie-St.-Raphaël, NB

The Department of Environment and Local Government's (DELG) Environmental Assessment Section has reviewed Crandall Engineering Ltd.'s most recent submission (dated July 7, 2017) regarding the above-mentioned project, which includes additional details about the anticipated use of the facility's new well.

While the submission indicates that water consumption would be close to 50 m³/day during peak season, it must be noted that the applicable trigger for an environmental impact assessment (EIA) review speaks to all waterworks with a capacity greater than 50 m³/day. A well that needs to provide close to 50 m³/day at any point of the year and that would have a peak flow of 60 USgpm (330 m³/day) would therefore require a capacity greater than 50 m³/day. As a result, DELG's position from the June 24, 2016 letter (see attached copy) remains the same, and the project must be registered for an EIA review and receive a *Certificate of Determination* before the waterworks can be put into operation. The requirements outlined in the June 24, 2016 letter still apply.

If you have any questions, feel free to contact Pierre Doucet at (506) 457-6757, or by fax at (506) 453-2627, or by email at pierre.doucet@gnb.ca.



Sincerely,

A handwritten signature in black ink, appearing to read "David Maguire", with a long horizontal flourish extending to the right.

David Maguire
Manager, Environmental Assessment Section

C: Jean Girouard – Public Works and Government Services Canada
Raymond Losier – Fisheries and Oceans Canada
Stéphane Savoie, P.Eng. – Crandall Engineering Ltd.
Pierre Doucet – Department of Environment and Local Government

June 24, 2016

Pierre Plourde, P.Eng.
Crandall Engineering Ltd.
1077 St. George Boulevard
Suite 400
Moncton, NB
E1E 4C9

Mr. Plourde,

RE: Fisheries and Oceans Canada – Wharf Reconstruction – New Well – Ste.-Marie-St.-Raphaël, NB

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David Maguire
Manager, Environmental Assessment Section

C: Jean Girouard – Public Works and Government Services Canada
Raymond Losier – Fisheries and Oceans Canada
Stéphane Savoie, P.Eng. – Crandall Engineering Ltd.
Pierre Doucet – Department of Environment and Local Government

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| INFORMATION SUR LE BORDEREAU D'ANALYSE DE L'EAU OBLIGATOIRE POUR L'ANALYSE DE L'EAU | | | | | | L'INFORMATION SUR LE PROPRIÉTAIRE DU PUIIT NOM DE L'USAGER L. BREAU & SON | | | |
| ADRESSE (BIMOTEUR LES RÉSULTATS À) | | | | | | ADRESSE 134 RUE LALLAIN | | | |
| VILLE/VILLAGE NOUQUAC | | | | | | PROVINCE CODE POSTAL NB E9G1J3 | | | |
| N° DE TÉLÉPHONE DE JOUR | | | | | | N° DE TÉLÉSCOPIEUR | | | |
| N° DE TÉLÉPHONE | | | | | | ÉMPLACEMENT DU PUIIT: MÈNE QUE CATERPILLAR OU QUAI | | | |
| AVEZ-VOUS BESOIN D'UN ÉCHANTILLON POUR VOTRE HYPOTHÉCAIRE? | | | | | | DÉTAILS AU VERSO | | | |
| SI VOUS VOULEZ QUE LES RÉSULTATS SOIENT DIVULGUÉS À L'INSTITUTION HYPOTHÉCAIRE, VEUILLEZ INCLURE L'INFORMATION SUIVANTE: | | | | | | PUIIT SUR RÉSERVE? OUI NON SÉPARATION DE L'INFORM. PUIIT OUI NON | | | |
| ATTENTION DE: | | | | | | RAPPORT DE FORAGE | | | |
| N° DE TÉLÉPHONE | | | | | | PROF. (pieds) À (pieds) COULTURE TYPE DE ROCHE | | | |
| SIGNATURE DU PROPRIÉTAIRE DU PUIIT | | | | | | 7 14 BRUN FILL 14 23 BRUN GRAVOIS 23 28 BRUN GRES FIN 28 33 BRUN GRES MOY 33 39 BRUN GRES GROS 39 40 BRUN GRES MOY 40 61 BRUN GRES FIN 61 63 BRUN GRES MOY 63 66 BRUN " " 66 72 BRUN GRES FIN 72 76 GRIS GRES FIN 76 BRUN SHISTE | | | |
| LE COUT DE CE PUIIT A-T-IL ÉTÉ PAYÉ PAR HABITATION NOUVEAU-BRUNSWICK? OUI NON | | | | | | UTILISATION DU PUIIT OU DE L'EAU: INDUSTRIEL AGANDONNÉ DOMESTIQUE EXPLORATION USAGE MUNICIPAL SURVEILLANCE THERMOPOMPE OBSERVATION AUTRE | | | |
| TYPE DE TRAVAUX EFFECTUÉS: NOUVEAU PUIIT PLUS PROFOND | | | | | | MÉTHODE: OUTIL AU CÂBLE BOUTEIL AU PUIS | | | |
| INSTALLATION DE TUBAGE: LONGUEUR DU TUBAGE AU DESSUS DU SOL | | | | | | 1 PIEDS 0 POUCHES | | | |
| ANCIEN: 6 PO DIAMÈTRE DE 0 PIEDS À 19 PIEDS | | | | | | PVC: PO DIAMÈTRE DE PIEDS À PIEDS | | | |
| OUVERTURE: PO DIAMÈTRE DE PIEDS À PIEDS | | | | | | CRÉPINES: TYPE: Brosseur des ouvertures EN DIAMÈTRE DE PIEDS À PIEDS | | | |
| RETRAITS: DÉTAILS AU VERSO | | | | | | Puits Septique (1) 200 pieds Puits Septique (2) pieds, Champ (2) 220 pieds | | | |
| *Empire d'axe route publique: 250 Route (2) | | | | | | RETRAITS MESURÉS: (naturelle construction) RETRAITS APPROXIMATIFS INDIQUÉS PAR LE PROPRIÉTAIRE (approximatifs) | | | |
| PUIIT JAILLISSANT? OUI NON | | | | | | SI OUI - TAUX: (gallon/lapouce) | | | |
| ESSAI DE POMPAGE: MÉTHODE: Casella pneumatique | | | | | | Profondeur totale du puit: 76 pieds Profondeur à la roche-mère: 14 pieds | | | |
| NIVEAU D'EAU INITIAL: 7 PIEDS SUIVANT L'ÉPREUVE DU TUBAGE | | | | | | Agitation: 40 g/min à 23 pieds à 40 g/min à 41 pieds | | | |
| TAUX DE POMPAGE: 100 g/min DURÉE: 30 min | | | | | | Taux de hauteur: 20 g/min à 71 pieds à g/min à pieds | | | |
| NIVEAU D'EAU FINAL: PIEDS SUIVANT L'ÉPREUVE DU TUBAGE | | | | | | INSTALLATION DE LA POMPE: INSTALLÉE NON INSTALLÉE | | | |
| DÉBIT DE PRODUCTION ASSURÉ: 90 g/min | | | | | | Installation de la prise d'eau de la pompe: 68 pieds sous le dessus du tubage | | | |
| COLMATAGE DU PUIIT: OUI NON | | | | | | TYPE DE POMPE: SUPERVARIABLE JET TURBINE | | | |
| DE: PIEDS À PIEDS TYPE DE COULIS: | | | | | | AUTRES: | | | |
| LIQUIDES DE FORAGE UTILISÉS: OUI NON | | | | | | PUIIT DÉSINFECTÉ: OUI NON | | | |
| TYPE: EAU | | | | | | TYPE: JAVEX | | | |
| COMMENTAIRE DU FOREUR: UTILITY WATER LAVER BATEAU ETC. | | | | | | ENTREPRISE DE FORAGE: Modern Well Drilling LTD | | | |
| G.P.S. (FACULTATIF) | | | | | | DATE D'ACHEVEMENT: 1.6.05.18 N° DE PERMIS: 38 | | | |
| J'ATTESTE QUE LE PUIIT DÉCRIT AUX PRÉSENTES A ÉTÉ CONSTRUIT CONFORMÉMENT AU RÉGLEMENT SUR LES PUIITS D'EAU ÉTABLI EN VERTU DE LA LOI SUR L'ASSAINISSEMENT DU NOUVEAU-BRUNSWICK. | | | | | | Copie Usager - MF01 NB | | | |
| Signature du titulaire: | | | | | | Copie Propriétaire/Bon | | | |
| Signature du co-construiteur: | | | | | | Copie Propriétaire | | | |
| | | | | | | Copie Entreprise/Entrepreneur | | | |
| | | | | | | RETOURNER UNE COPIE DE CE RAPPORT AVEC VOS DOCUMENTS IMPORTANTS | | | |