

NEW WELL DEVELOPMENT TIMELINE

DATE	SOURCE	COMMUNICATION DETAIL
12/22/78	Layne Christensen Co.	Report of Test Well 2A-78. Promising results.
1/3/01	Layne Christensen Co.	Scope of Services Proposal for Production Well at 1978 Location
11/26/01	Layne Christensen Co.	Report of Test Well 1-01 and 2-01
1/17/03	Layne Christensen Co.	Progress Update Regarding New Source Investigation
1/17/03	Barrie Miller's Well Service	Quote for Rehabilitation of Well #1 pump -- \$12,319
1/29/03	NHDES, Richard Skarinka	2002 Marlborough Water Works Sanitary Survey <p>"Both of these (groundwater) supplies are vulnerable to potential contamination due to their proximity to activity within the protective radius and wellhead protection areas. We realize the Town has begun investigation into alternative locations for ground-water supply and DES encourages the managers to continue to pursue alternative sites. This should be the top priority for the managers of the water system."</p> <p>"The Town has not upgraded this well (#1) for daily operation including a master meter, electrical controls, and flushing hydrant. We suggest that the managers determine the long-term use of this well as a water supply. If the Town intends to maintain this well as long-term supply, we strongly recommend that the managers include funds in next year's budget to upgrade the well and pump house."</p> <p>"The type and location of the gravel packed well #2 lends itself to be very vulnerable to contamination from activities adjacent to the well. In the past, the well has shown detection of volatile organic contaminants (VOCs). The source of this contamination was believed to be from a gasoline station upstream of the well. It is important to realize that very small discharges of VOCs can contaminate a groundwater supply. Therefore it is important that the water system carefully monitor activity near the well and make every individual aware of the drinking water supply. We suggest prohibiting parking adjacent to the well along Fitch Ct. It is our understanding that the Town has investigated a potential site for an alternate groundwater supply. Due to the vulnerability of the existing sources, we encourage the Town to continue investigation of an alternate groundwater supply."</p> <p>"Restrict parking adjacent to Well #2."</p>
1/31/06	NHDES, Richard Skarinka	2005 Marlborough Water Works Sanitary Survey <p>"The Town of Marlborough water system currently relies on two</p>

groundwater supplies, both of which are vulnerable to potential contamination due to their proximity to activity adjacent to the wells. These are valuable assets for the Town and the managers need to make a commitment to these facilities or develop an alternative supply. **These facilities need to be upgraded to improve efficiency of operation and ensure long-term reliability.** Also, the managers need to greatly improve wellhead protection. At the time of the survey, the master meter was inoperable and the operator indicated that the Town was waiting for a spare part to repair the meter."

"At the time of the survey, we observed a recreation vehicle parked within 100 feet of Well #1. This issue was mentioned in the previous survey as a significant deficiency. The managers need to address this issue immediately. It appears that the vehicle is being stored there for the season."

"The type and location of the gravel packed Wells #1 and #2 both lend themselves to be very vulnerable to contamination from activities adjacent to the wells. For example, Well #2 is located along Fitch Court, 10 feet from the edge of pavement. Adjacent to the well is a playing field. Obviously, cars park directly next to the well. Ideally, this well should have a 400 foot radius with no activity within this radius. Also, the piping within the pump house should be replaced along with a new master meter. We suggest prohibiting parking adjacent to the well along Fitch Court."

"Well #1 is sited on a small parcel of land controlled by the Town. This well is primarily used as a backup water supply. The Town has not upgraded this well for daily operation including a master meter, electrical controls, chemical feed system, and flushing hydrant. This well is not properly equipped for daily operation for a sustained period of time. We suggest the managers determine the long-term use of this well as a water supply. If the Town intends to maintain this well as a long-term supply, the managers must greatly improve wellhead protection measures and upgrade the well and pump house. Both of the existing groundwater supplies for the Town are very vulnerable to contamination. Small traces of MTBE have shown up in both of the wells in the past. Both of the pump houses are in need of repair. These wells are valuable assets for the Town and should not be ignored. The managers should make a concerted effort to protect the existing supplies and **be more aggressive in identifying an alternative groundwater site for development in the future.**"

4/10/06 NHDES, Richard Skarinka School Proposal Response letter to HL Turner

5/10/06 NHDES, Richard Skarinka Proposed Fitch Court relocation

"A recent proposal for the new school site shows Option #2 for Fitch Court. This option shows Fitch Court to be relocated to the

east of the existing ball fields, at the base of the existing embankment. This option provides better protection of the existing groundwater supply than the original option. By relocating Fitch Court, both the existing traffic and future traffic generated by the proposed school will be directed further away from the existing well and most activity including parking adjacent to the well will be eliminated."

7/5/06 NHDES, Brandon Kernan	Hydrogeologic Information for Marlborough Water Works
7/17/06 Gordon Waterworks	Quote for piping repair at Well #1 -- \$14,600
7/27/06 Rural Water, Scott Clang	Meeting to discuss Well #2 meter, new well, Well #1 pump house
5/7/07 SVE Associates	Water System Upgrade Cost Estimates Well #1 Renovation--\$168,669 Well #2 Renovation--\$297,948
7/1/07 GS Environmental	Contracted GS Environmental for hydrogeological survey of town
9/1/07 GS Environmental	Report recommends bedrock well at Pavilion or Route 101
3/8/09 ENSR Corp., Jim Vernon	Retained for preliminary water supply feasibility study
3/28/08 Meeting and Site Visit	Christine Bowman, Steve Roy and Bob Mann of NHDES Scott Clang of Granite State Rural Water Rob Hitchcock of SVE Associates, ENSR reps and Town reps.
	<p>"The Town and ENSR described project history and background. NHDES described the Large Groundwater Withdrawal Permit process. This discussion detailed a number of requirements and associated challenges, especially including wetlands impacts. A possible water system connection with the City of Keene was also discussed. The Town expressed the desire to proceed in a correct and open manner regarding the regulatory requirements for the project."</p>
	<p>"Following the meeting, the group visited existing Well #1, existing Well #2 and the Pavilion site on Fitch Court, northwest of Well #2. The field trip served to contrast the existing well sites with the Pavilion site, the NHDES showed some flexibility and did not rule out the site. Although the NHDES can make no guarantees at an informal site visit, they appeared to indicate that waiver requests for the sanitary protection area would be considered. Specifically, sewer line, Pavilion, and storage shed.</p>
4/8/08 ENSR Corp., Jim Vernon	Proposed test boring at Pavilion site to develop gravel-packed well (s).
4/18/08 ENSR Corp., Jim Vernon	Report on Site Meeting with NHDES and Project Update: Water Supply Feasibility Study

"ENSR believes that it may be feasible to develop and permit

a gravel-packed well in stratified drift at the Pavilion site, based on the previous test wells installed by Layne and based on other factors. Therefore, ENSR has focused efforts on a gravel-packed well at the Pavilion site. There are several advantages to this solution:

1. Existing Well #2 is nearby and demonstrates that the aquifer can be a productive source of excellent quality water
2. The Pavilion site is near existing infrastructure
3. Initial, small diameter test wells are less expensive than bedrock test wells
4. The Town owns the site
5. Information obtained from Layne regarding the previous test drilling is encouraging
6. The NHDES has visited the site, understands the challenges and did not rule it out.

6/12/08 NHDES Meeting

ENSR invited to attend school project planning meeting @NHDES

"Bob Mann said that if Fitch Court is not moved, continued use of existing Well #2 would be unacceptable."

6/17/08 Site Visit

NHDES site visit in response to water protection petition

7/15/08 NHDES, Sarah Pillsbury

Decision letter regarding petition site visit

"Contract documents will strictly limit contractor activities in the area of the Well during school construction. Refueling and lubrication of vehicles will be limited to an impervious pad in a designated area."

"DES understands that all parties are concerned about protecting the Well, and continue to discuss best means to protect the well while accommodating the multiple existing land uses in the area."

7 & 8/08 Test well drilling

Concludes TW2/2A is best location. Installed 6" test well; ran 8-hour pumping test at 83 gpm; little wetlands impact.

8/28/08 Meeting and Site Visit

NHDES, ENSR, SVE, school and town representatives. Presented drilling and testing results; discussed sewer line; wetlands; no salt on Fitch Court. Decided longer pump test needed to assess possible wetlands impacts.

10 & 11/08 Underwood Engineering

Pressure test of sewer line; recommend lining pipe

12/5/08 Joint Meeting @NHDES

Meeting of Town and School representatives with various State departments to discuss coordination of well and school projects.

12/8/08 ENSR Corp., Jim Vernon

3 day draw-down test at Pavilion site

12/11/08 NHDES, Sarah Pillsbury

Meeting summary and NHDES directive for Selectmen to submit timeline to NHDES within 45 days.

"The Selectmen and the School District have recognized previously that it is in both parties' interest to protect Well 2 if it is to remain in operation. That protection will include control of potential contamination during construction, appropriate treatment and disposal of storm water and snow melt, and access to the site by means other than the existing Fitch Court. Given the importance of the access road, and the need for assurance that re-located access is feasible, all parties have agreed that a proposed relocated access road must be included in a revised Alteration of Terrain design proposal and that all other necessary environmental permits be obtained for this scenario. With regard to the Pavilion well site, the Town has agreed to restrict vehicle access, and to control fertilizer use and Porta-Potty placement at the site. The Selectmen have also committed to lining of the gravity sanitary sewer which crosses the site."

"Please supply us (NHDES) with the timeline and anticipated means of financing within 45 days of this letter."

1/30/09 SVE Associates

Final estimates for the three well options for Town Meeting

2/3/09 Selectmen letter to NHDES

Providing timeline and financing options as requested