



United States Department of the Interior

NATIONAL PARK SERVICE
Water Resources Division
1201 Oak Ridge Drive, Suite 250
Fort Collins, CO 80525

IN REPLY REFER TO:

April 3, 2000

L54(2380)
FIIS/General

Memorandum

To: Superintendent, Fire Island National Seashore

Through: William L. Jackson, Chief, Water Operations Branch

From: Larry Martin, Hydrologist, Water Operations Branch

Subject: Trip Report for Travel to Fire Island National Seashore on March 21-24, 2000

PURPOSE: The purpose of this trip was to locate and evaluate flowing artesian wells at Fire Island and develop plans for plugging and abandoning these wells.

SUMMARY: Three abandoned flowing wells are located within the designated wilderness area of the park. Two more abandoned flowing wells are located outside of the wilderness area. A project proposal will be submitted for NRPP/Disturbed Land Restoration funding to properly plug and abandon these five wells.

Three water supply wells at park facilities are allowed to flow continuously when the water is not being used. This water spills on the ground, creating unnatural wetlands and artificial habitat. The impacts created by this uncontrolled discharge of water could be eliminated by constructing recharge basins. This is becoming the standard operating procedure for the Suffolk County Water Authority wells on Fire Island.

DISCUSSION: Uncontrolled flow of water from abandoned artesian wells in the park's wilderness area has been a concern since at least 1989 (prior to designation of the wilderness area). A letter from the New York Department of Environmental Conservation, dated August 16 1989, directed the park service to properly cap and abandon any out of service artesian wells.

During this site visit, I identified three abandoned flowing artesian wells in the wilderness area. One well is at Smith Point and two wells are at Whalehouse Point. Well construction records have been obtained from the New York Department of Environmental Conservation to aid in planning the plugging and abandoning these wells. Additional records were found for test wells drilled at

Whalehouse Point, but it appears that none of these test wells were completed as permanent wells. No evidence could be found of additional flowing wells in the area and park staff familiar with the area did not know of additional wells at this location.

Two abandoned flowing artesian wells were identified outside the wilderness area. One well is the former supply well at Barrett Beach. The other well is located on the south side of the road about ¼ mile east of the lighthouse. Well construction records are not available for either of these wells. However, it is reasonable to assume that their construction and depth is similar to other wells on Fire Island.

A project proposal will be prepared for submittal for NRPP/Disturbed Land Restoration funding to plug and abandon these wells. Uncontrolled water flow from these wells has unwanted impact on park natural resources. These impacts include changing the ecosystem of interdunal areas, creating artificial freshwater wetlands around the wellheads, creating breeding grounds for mosquitoes, wasting potable groundwater, and lowering the artesian pressure within the deep aquifer system.

The water supply wells supplying park service facilities at Talisman, Sailors Haven, and Watch Hill were inspected. At each of these sites, artesian flow from the wells is allowed to discharge on the ground when the wells are not being pumped. This creates impacts as noted above for the abandoned wells. Flow rates from these wells were estimated to range from 20-50 gallons per minute, creating large areas of ponded surface water and unnatural vegetation. Allowing wells to flow all year round is the generally accepted practice on Fire Island. The Suffolk County Water Authority allows their wells to continue flowing when the water is not being used. The Water Authority is planning to construct recharge basins to eliminate discharge of water to the ground surface or directly to the bay. The Park Service could also construct recharge basins or infiltration galleries to eliminate uncontrolled discharge of overflow water from the wells onto the ground surface. This would eliminate most of the natural resource impacts associated with this practice, most notably the creation of artificial wetlands near the wells

When new water supply wells are constructed for park service facilities on Fire Island, they should be constructed with pvc casing and incorporate sufficient gravel pack and development of the well. These steps should eliminate problems of sediment and rust building up in the well and allow the wells to be shut-in during the winter months without experiencing turbidity problems when the wells are turned on in the spring.

ACTION ITEMS:

1. Prepare a project proposal for funding from the NRPP/ Disturbed Land Restoration program. Responsible Party: L.Martin. To Be Completed By: April 21, 2000.

cc: NAR - Janet Wise, Charles Roman
479 - Dan Kimball, Gary Rosenlieb
FIIS - Mike Bilecki, Jim Ebert, Paul Czachor, Steve Singler

Summary of water wells at Fire Island National Seashore.

- S-30550 Water supply well at Sailors Haven
Depth = 483'
Casing 6" diameter, 457' of casing grouted from 0-275 feet
Screen 455-480', 6" No. 30 slot stainless steel wire wound screen
- S-31113 Water supply well at Talisman
Depth = 484'
Casing 6" diameter, 450½' of casing grouted from 0-280 feet
Screen 464-484', 6" No. 30 slot stainless steel wire wound screen
- S-51461 Water supply well at Watch Hill
Depth = 467'
Casing 6" diameter, 466½' grouted from 0-330'
Screen 430-460', 6" No. 25 slot stainless steel wire wound screen

Abandoned wells to be plugged

1. Smith Point

S-3636, approx ½ mile east from Smith Point parking area
Constructed 1943, reported Q=21 gpm
8" casing, 0-134'
6" casing 0-340'
4" casing 0-361'
Screen, 15' of Cook screen, No. 25 slot, 361-386'

2. Whalehouse Point

S-3839, believe this is the well north of the ponded area, toward bay
Constructed 1944, reported Q=1.5 gpm, estimated March 2000 at 50 gpm
10" casing, 0-150'
8" casing 0-355'
Screen, 10' of 6" Johnson Everdur, 355-365'

3. Whalehouse Point

S-31112, believe this is the well immediately south of Burma Road
Constructed 1967, flow rate not reported, estimated March 2000 at 15-20 gpm
6" casing 0-443'
Screen, 28' of 6" Johnson stainless steel, No. 30 slot from 440-465'
Drilled as a 16" hole. Cement grout 0-280' and 420-430',
Filled with drill cuttings from 280-420'
Drilled to TD 510', backfilled to 475', cement grout 470-475',
Gravel pack 430-470'

4. Barrett Beach

Formerly supply well for Barrett Beach, which was private land owned by the Town of Islip. Property has been transferred to NPS.

No information available for this well. NY-DEC has no records.

Probably similar to other wells on the island, 6" casing and screen to about 450'

5. Lighthouse

Abandoned well approx ¼ mile west from the lighthouse.

No information available for this well. NY-DEC has no records.

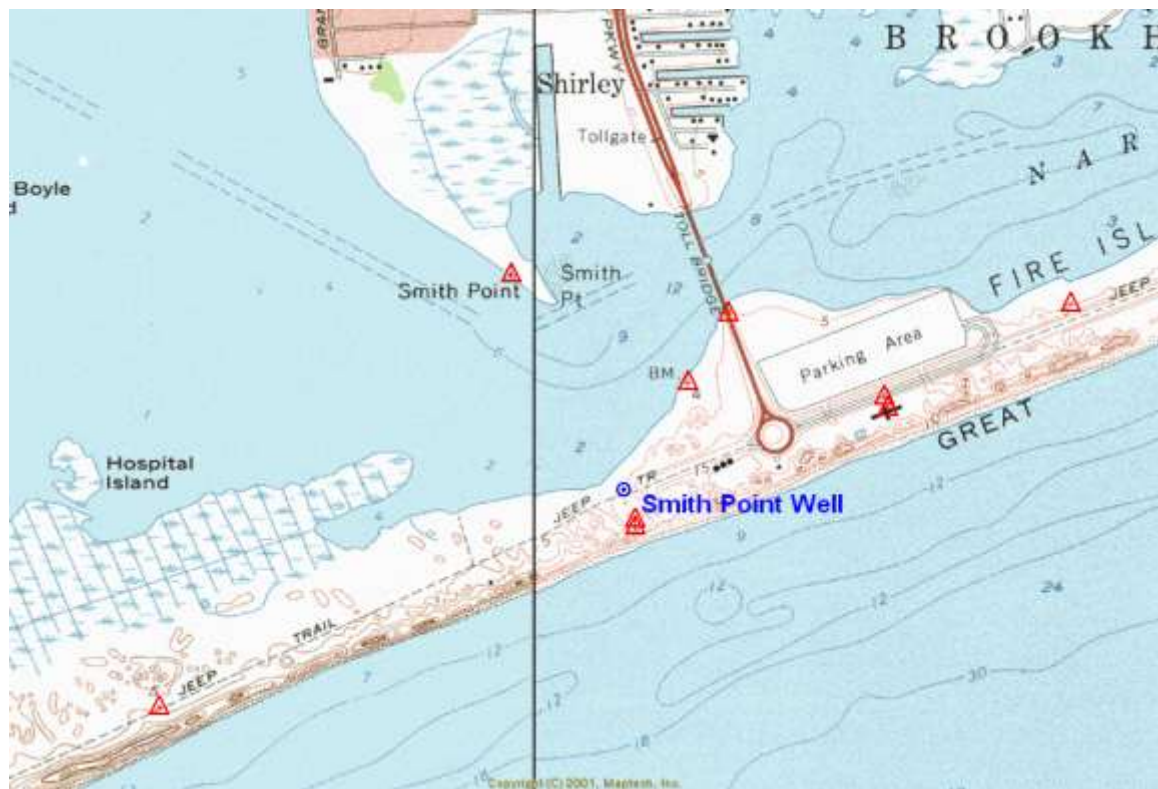
Probably similar to other wells on the island, 6" casing and screen to about 450'

We have records of several other wells or test holes that were constructed on Fire Island in the vicinity of Whalehouse Point or the Bellport Life Guard Station. There is no evidence of these wells in the field. Park staff familiar with the area can not recall seeing other artesian wells or capped well casing in the area. The NY-DEC does not have record of these test holes ever being completed or converted to permanent wells. NY-DEC staff had attempted to locate these "wells" about 1990 and could not find them in the field. It is quite possible that these were test wells constructed for hydrologic or geologic investigations and were plugged and abandoned. The owner of the wells is Columbia University. They were drilled in 1955-56.

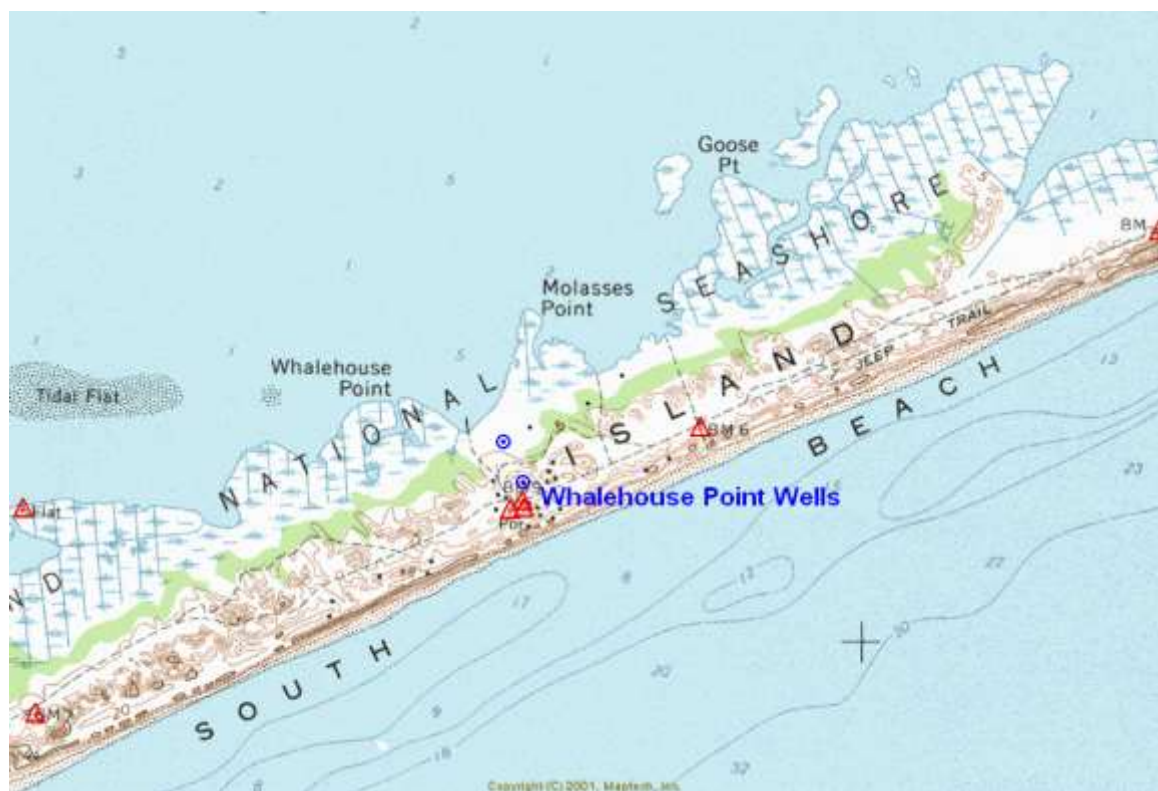
These wells include; S-15106T, S-15342T, S-15343T, and S-15384T.

Larry Martin

April 2000



Plugged & Abandoned



Plugged & Abandoned



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Barrett Beach Well was capped. It might be used in the future.
 Talisman is an NPS supply well. An infiltration return system was installed there.



Sailor's Haven is an NPS supply well. An infiltration return system was installed there.



Watch Hill is an NPS supply well. No work was done at the well during the 2002 project.