

**From:** [L.Corradi](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Bethpage/massapequa plume  
**Date:** Tuesday, August 23, 2016 9:33:05 PM

---

The Grumman/Navy Plum is advancing each day and threatening our sole source aquifer water supply and the Great South Bay. The Massapequa water district has been fighting this for years but until recently has not been taken seriously. Headlines from Flint Michigan and policital heads there on the chopping block for ignoring the problems in Flint have changed the conversation in our area. It is about time that the Department of Environmental Conservation (DEC) has commissioned a report to identify options and costs for containment of the plume. Our water district holds Grumman and the Navy responsible for the cost of containment and, I believe, is prepared to begin a law suit if necessary to ensure the tax payers do not bare the burden of this expense.

Please be advised of the following:

- I fully support the actions necessary for the containment of this groundwater plume.
- The plume must not be allowed to continue to migrate, contaminate more public drinking water wells, and make the public sick.
- This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed any further.
- The sole source aquifer water supply must be restored to protect public health.
- Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for their actions and therefore cover the cost of funds necessary for cleanup and NOT the public within the water districts.
- Unregulated and unknown contaminates continue to be discovered and associated with this plume. Protection of public health must be a priority.

Thank you.  
Lisa Corradi  
205 Commonwealth Ave  
Massapequa, NY 11758

**COMMENTS ON THE REMEDIAL OPTIONS REPORT REGARDING FULL  
CONTAINMENT OF THE GROUNDWATER PLUMES FROM THE GRUMMAN  
AEROSPACE FACILITY AT BETHPAGE, NEW YORK**

DATE: September 8, 2016

TO: New York State DEC, Division of Environmental Remediation  
Via email: [derweb@dec.ny.gov](mailto:derweb@dec.ny.gov)

FROM: Sarah Meyland, MS, JD  
Assoc. Professor, Center for Water Resources Management  
New York Institute of Technology  
Old Westbury, NY 11568  
516-686-7765

---

**COMMENTS**

The following comments are based on a review of the *Remedial Options Report*, prepared for the NYS DEC by HDD, dated July, 2016.

Cleanup of the many contaminated sites associated with the Grumman Aerospace Bethpage Facility has consumed years and millions of dollars so far and is far from completed. The Remedial Options Report finds that the large south-southeast trending plume from the facility is projected to reach the Southern State Parkway in the near future. But the three options offered to stop its continued migration are present a choice between conflicting goals and needs. The conflict is between cleaning and wasting the groundwater for 100 – 200 years because 19 MGD is too much water to return to the aquifers or reuse for non-potable purposes. Consequently, the chosen options are unsettling and unacceptable.

**The “Catch 22” Problem**

Nassau County’s aquifer system cannot afford the loss (waste) of such a large amount of water, daily. The DEC Region One office has recently reported that groundwater loss in Nassau due to over-pumping is already over-drafting the aquifer system by at least 15% beyond what is sustainable.<sup>1</sup> The USGS has found that over-pumping has also reduced groundwater outflow to coastal waters. This is the same outflow that holds the ocean out of the aquifers. The loss of such a substantial amount of water daily from the groundwater system will risk damage to aquifers due to saltwater intrusion.

Given the conflict between groundwater remediation vs. groundwater protection, a new approach is needed now that the Options Report has been released. Dumping 19 MGD into the ocean represents 10% of the daily pumping in Nassau County and this is an unsustainable stress on the aquifer system. It should also be noted that one rehabilitation plan for the Bay Park Sewage Treatment Plant is to send approximately 50 MGD of treated sewage effluent to Cedar Creek STP.

Leadership from the DEC (Division of Environmental Remediation and Division of Water together) is needed to find a better way to **preserve groundwater quantity** as well as working to **clean up the**

---

<sup>1</sup> This estimate may underestimate the extent of over-drafting of the aquifers beneath Nassau County.

**quality** of the groundwater at Bethpage and elsewhere in the County. The recommended treatment options (pump and treat with GAC or air stripping) are frequently used on Long Island superfund sites and are reasonable. The disposal options for the treated water – those deemed “technically feasible” – are **unacceptable**. And on the issue of sustainability, those who dismiss the issue of groundwater quantity concerns are misinformed as to the seriousness of this risk.

If the planning horizon is 100 to 200 years, the solutions for the treated groundwater must also take the long view. Better choices for reuse and recharge must be recommended, even if the final implementation takes a little longer and requires more coordination. Rather than building a pipeline to the ocean, it is better to build a pipeline back to the center of the County. Perhaps the Bethpage Water District might have some interest in the water if it meets all drinking water standards?

It would be ironic if the wells south of Southern State Parkway were eventually destroyed by saltwater intrusion as a consequence of protecting them from CVOCs. Nassau County DPW has predicted that saltwater in the Magothy aquifer could advance well beyond Sunrise Highway, on the south shore, if pumping is not reduced.<sup>2</sup> For the Lloyd aquifer, saltwater intrusion could advance even further northward along the south shore.<sup>3</sup>

The option to discharge most of the water to Massapequa Creek has not examined the ecological impact of such as large amount of freshwater into the estuary system.

These comments are not objecting to the goal of halting the southward migration of the Grumman plume past Southern State Parkway. But, CVOCs are not the only risk to the public water supply wells. Climate change and saltwater intrusion are critical unknowns that cannot be dismissed or ignored.

### **Conclusion**

If the cost of the three options ranges from a quarter of a billion dollars to half a billion dollars, we should achieve a result that protects water supply wells from CVOCs and does no harm to the aquifer system in other ways. If sea level increases several feet over the next 50 years, which seems more likely than not, relying on the Cedar Creek STP as one solution may need to be reconsidered due to its vulnerability to coastal inundation.

Thank you for this opportunity to comment on the *Remediation Options Report*.

---

<sup>2</sup> *Nassau County 1998 Groundwater Study, 1998*, Department of Public Works, CDM; Figure 3-18, pg. 3-20.

<sup>3</sup> *Ibid.* See Figure 3-19, pg. 3-21.

# RIGANO LLC

*Attorneys at Law*

James P. Rigano

[jrigano@riganollc.com](mailto:jrigano@riganollc.com)

538 Broad Hollow Road, Suite 217  
Melville, New York 11747  
tel: 631.756.5900 | fax: 631.756.0008  
[www.riganollc.com](http://www.riganollc.com)

September 7, 2016

New York State Department of  
Environmental Conservation  
625 Broadway  
Albany, New York 12233-7012

Re: Comments on Remedial Options Report

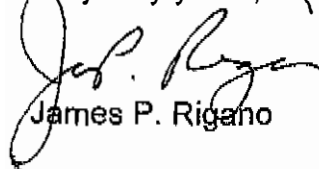
Dear Sir or Madam:

I have reviewed the Remedial Options Report, Grumman Aerospace-Bethpage facility prepared for the New York State Department of Environmental Conservation by HDR. The report was issued in July 2016 and evaluates options to intercept and remediate the groundwater plume associated with the Grumman Aerospace-Bethpage facility.

The report discusses the withdrawal of substantial volumes of groundwater that, after treatment, would be discharged to surface water. This would result in the loss of an enormous volume of water from the sole source aquifer that provides residents of Nassau County with drinking water. Alternatives must be addressed that would result in the recharge of the treated water to the ground. This would involve the development of associated infrastructure so that there is no significant loss to the aquifer. It is critical that the remedial options include the recharge of the extracted water.

Additionally, anecdotal information suggests that the New York State Department of Environmental Conservation will seek Natural Resource Damages and will not be requiring the responsible parties, which include the United States of America, to implement the work described in the Remedial Options Report. There is significant citizen interest in the implementation of the remedial options. In the event that the State does not require the implementation of the remedial activity, citizens may proceed to commence an action seeking to have the remedial options implemented by the United States of America or other parties. The DEC should consider endorsing such an action.

Very truly yours,



James P. Rigano

**From:** [Phil Healey](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** comments on Remedial options Report  
**Date:** Thursday, September 08, 2016 10:45:39 PM

---

Dear Sirs:

I am submitting a comment on behalf of one of the mentioned stake holders, Biltmore Shores (Page 9), in Massapequa. As proposed in the report, Biltmore Shores would be the end receipt of the proposed remedial actions. Prior to specifically commenting on the actions, we must be clear that those responsible for creating and allowing this problem to fester to its current state are guilty of complacency and irresponsibility. The extent of this issue and the people that will be effected today for and generations to come is and should be classified as a criminal act. Our once sole source pristine drinking water will now be a source of permanent contamination, and the future of our drinking water to be considered healthy will forever be met with skepticism. Undoubtedly, the residents will be forced into significant expense to acquire new water sources for eastern Long Island or the NYC system. Our property values will drop due to the stigma associated with pollution and contamination. The property owners in the path of the plume must be presented with a plan for compensation.

The remediation plans call for an absurd clean up and monitoring time frame of 200 years. Those that suggest that the time frame must be out of touch with reality to assume that the proposed building materials will function for the decades much less centuries, and the conveyance system of the creeks, bays and shorelines will remain in their present state.

Our comments on specific remediation actions pertain to the objection of R O#1 and R.O.# 2.

#### Remedial Option # 1

The objection to this option is the proposal to discharge the water into the Massapequa Creek. Specifically:

- <!--[if !supportLists]-->• <!--[endif]-->It is unrealistic to believe the creek , ponds and lakes will be able to absorb the daily extra capacity
- <!--[if !supportLists]-->• <!--[endif]--> It is unrealistic to state that during a storm event over the next 200 years, that the discharge into the creek will be halted.
- <!--[if !supportLists]-->• <!--[endif]-->The discharge from the southern lake into the canal at Biltmore Shores will not be able to handle the capacity.
- <!--[if !supportLists]-->• <!--[endif]-->The elevation of the eastern waterfall is lower than the western waterfall at the southern lake, commonly known as Caroons Lake. The volume of water exiting the lake enters the saltwater by traveling underneath the roadway via a culvert located underneath a residential property. The volume and flow rate will destroy this home.
- <!--[if !supportLists]-->• <!--[endif]-->The salinity of the canals, bays and wetlands will be drastically altered, affecting the active bay side, and damaging the marine life, fishery and shell fish forever.
- <!--[if !supportLists]-->• <!--[endif]-->The additional water and flow rate will disturb the sediment of the ponds and lakes. The sediment was deemed hazardous due to metals

tied in to plumes by the former Liberty Aircraft site in Farmingdale. The toxic sediment cannot be disturbed.

## Remedial Option # 2

The discharge of the billions of gallons of water into the sea will greatly affect the ground waters of the area, further reducing the levels of surface freshwater. Additionally, this will lead to salt water intrusion, and new expenses for consumers for new and deeper wells. This option did not mention the absolute necessity for retro fitting existing wells with filtration to match the current water quality, which exceeds the inadequate federal standards.

- <!--[if !supportLists]-->• <!--[endif]-->The plan must include the full utilization of treated water to be sent to existing, expanded and new recharge basins to recharge groundwater and the aquifer.
- <!--[if !supportLists]-->• <!--[endif]-->The plan must include secondary uses of irrigation systems and well injection.
- <!--[if !supportLists]-->• <!--[endif]-->The plan must include transmission of the water for industrial uses, such as cooling systems, at the major electrical power generation facilities. The facilities currently are open loop systems and must be converted to close loop systems.
- <!--[if !supportLists]-->• <!--[endif]-->The plan must include long term escrow accounts for the replacement of infrastructure, and compensation to water districts and consumers that now must be burdened by this environmental crisis.

Phil Healey, President  
Biltmore Shores Civic Association  
PO Box 292, Massapequa, NY  
516 398 6277  
[Biltmore1957@aol.com](mailto:Biltmore1957@aol.com)

**From:** [Paul J. Granger](#)  
**To:** [dec.sm.derweb](#)  
**Cc:** [John Reinhardt](#); [ghudes@tohmail.org](#)  
**Subject:** Remedial Options Report Regarding Full Containment of Grumman Plume  
**Date:** Tuesday, August 16, 2016 6:22:05 PM

---

August 16, 2016

James B. Harrington  
NYS DEC - Division of Environmental Remediation,  
625 Broadway  
Albany, New York 12233-7012

Re: Remedial Options Report Regarding Full Containment of Grumman Plume

Dear Mr. Harrington:

We are residents of the Levittown Water District. Our water supply is impacted by the Grumman-Navy plume so we have a vested interest in the protection of our drinking water and the health of our community. Therefore, we strongly support the containment of this groundwater plume. The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.

This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed. Our sole source aquifer water supply must be restored to protect public health. Since a price cannot be placed on protecting our health and the environment, cost must not be a deciding factor in the decision process. The Navy and Grumman must be strictly held accountable for the funds and not the water district ratepayers. We are aware that emerging contaminants continue to be discovered that are associated with this plume. In closing protection of public health must be a priority.

Your consideration of our concerns would be greatly appreciated.

Very truly yours,

Paul J. Granger

Dina A. Granger

74 Hyacinth Road

Levittown, NY 11756

516.796.0457

[pjgranger@verizon.net](mailto:pjgranger@verizon.net)

[dinagran@verizon.net](mailto:dinagran@verizon.net)

**From:** [Pat Beckley](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Massapequa Groundwater  
**Date:** Wednesday, August 24, 2016 9:14:54 PM

---

- I fully support the containment of this groundwater plume.
- The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.
- This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed.
- The sole source aquifer water supply must be restored to protect public health.
- Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts.
- Unregulated and unknown contaminants continue to be discovered and associated with this plume. Protection of public health must be a priority.



**From:** [Mike Schunk](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Grumman Toxic Groundwater Plume-Bethpage, NY  
**Date:** Wednesday, August 24, 2016 6:16:31 AM

---

Dear Sir / Madam,

I fully support the containment of this groundwater plume.

The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.

This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed.

The sole source aquifer water supply must be restored to protect public health.

Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts.

Unregulated and unknown contaminants continue to be discovered and associated with this plume. Protection of public health must be a priority.

Regards,

Michael F. Schunk

**317 First Avenue**

**Massapequa Park, NY**

**From:** [Michael G](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** BETHPAGE GRUMMAN PLUME  
**Date:** Tuesday, August 23, 2016 11:33:32 PM

---

I fully support the containment of this groundwater plume. The plume must not be allowed to continue to migrate and contaminate more public drinking water wells. This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed. The sole source aquifer water supply must be restored to protect public health. Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts. Unregulated and unknown contaminants continue to be discovered and associated with this plume. Protection of public health must be a priority. Do not allow this community to become another Flint Michigan.

Thank you,

Michael Gange  
7 Fairfield Rd  
Massapequa, NY 11758

Mikesr251@verizon.net

**From:** [Linda Lupario](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Comments on Remedial options Report  
**Date:** Friday, August 19, 2016 7:21:11 PM

---

As a resident of Bethpage, I believe that option 3 should be implemented, according to my interpretation of the report.

Linda B. Lupario  
87 Brenner Ave.

Sent from my iPad

**From:** [kim.white](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Plume  
**Date:** Tuesday, August 23, 2016 9:26:26 PM

---

- I / we fully support the containment of this groundwater plume.
- The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.
- This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed.
- The sole source aquifer water supply must be restored to protect public health.
- Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts.
- Unregulated and unknown contaminants continue to be discovered and associated with this plume. Protection of public health must be a priority.

Kim white  
Massapequa

--

Thanks,

Kim

Sent from Gmail Mobile

**From:** [John M. Waltz, P.E.](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Comments on Remedial Options Report - Grumman-Navy Plume Bethpage  
**Date:** Thursday, August 11, 2016 12:09:08 PM

---

Gentlemen,

1. I am in strong favor of remediation of the plume
2. Option 1 should be implemented. Pump, Treat, and the Beneficial Reuse of the treated water should be performed.
3. A diversity of reuse practices should be considered;
  - Seasonally, for irrigation at Bethpage State Park (eliminating the pumping from their irrigation wells)
  - Selective use of the existing recharge basins in the vicinity of the Seaford Oyster Bay Expressway (during non rain days)
  - Use the State Owned land at the north of Bethpage Park for additional recharge area.
  - Streamflow Augmentation of Massapequa Creek System to offset any effect that the withdrawal may cause and to supplement the flow during dry periods.
4. The Bethpage State Parkway, Seaford Oyster Bay Expressway is a good corridor to run mains to supply Bethpage State Park, and existing recharge basins.
5. The County's Cedar Creek plant should not be burdened with a hydraulic load of 19 MGD that can be beneficially reused and can offset the withdrawal of groundwater needed to remediate the plume.
6. The water suppliers should not be stuck with cleaning up the plume. The responsible parties should be held accountable for the cleanup, now.

Regards,

John Waltz

**JOHN F. CARUSO**  
**119 Adam Rd., Massapequa, NY 11758**  
[JFCCPM@aol.com](mailto:JFCCPM@aol.com)

September 8, 2016

Mr. James B Harrington  
NYS DEC Division of Environmental Remediation  
625 Broadway  
Albany, NY 12233 – 7012

**Re: Remedial Options Report Regarding Full Containment of Grumman Plume**

Dear Mr. Harrington,

As you know I am a former Deputy Commissioner of the Nassau County Department of Public Works, Division of Sanitation and Water Supply, and retired Water Commissioner of the Massapequa Water District providing me with extensive experience in the dynamics, contamination, and treatment of Our Sole Source Aquifer.

Over the past 20 years I have had an ever increasing concern regarding the toxicity and continuous spread of the Navy Grumman plume recommended and implemented decision for wellhead treatment as opposed to full plume containment. Many of the residents of Bethpage, South Farmingdale, and Massapequa are equally concerned with the DEC handling of this major contaminated Superfund site is plume has traveled unabated as far south as the Southern State Parkway. Commencing with the EPA failure to enforce their ROD regarding the RUCCO Superfund site and its connection with the adjacent Navy Grumman Superfund site, and the continuous contamination of drinking water supply wells as this toxic plume marches towards the Great South Bay, needless to say the concerns of many people have heightened substantially.

With the amount of detailed information available, regarding our Sole Source Aquifer (over 80 years worth), in particular it's geology, it's hydrology, it's dynamics, it's contamination, and it's protection, it is by far the most studied aquifer system in the United States if not the world, and that is precisely why many local water professionals have been questioning the Navy/Grumman and DEC proposed and implemented recommendations in their ROD for this highly contaminated plume. From the very onset of the discovery of this contamination in the groundwater, back in the 1960s, forcing the Navy and Grumman to contract with the Bethpage water district for clean water, the inevitable march of this plume to the Great South Bay was already set in motion based upon the dynamics of our aquifer system and supported by the information already accumulated (at that time) in reports, studies, and data by such agencies as the USGS, the Nassau County Department of Health, New York State, and various local colleges, universities and individuals.

*With that as background I must say that Option 1 of the above captioned report contains a giant leap forward by the DEC in recognizing that the only way to stop this plume from contaminating further drinking water supplies and eventually the Great South Bay is with full containment and treatment. I believe with some revisions Option 1 can become the answer to this highly complex health and environmental problem.*

**1.0 Acknowledgments:** For the first time in a Navy Grumman contaminated plume related report, the DEC is acknowledging that this highly contaminated toxic plume (i) will eventually discharge into the Great South Bay (paragraph 1.5 Potential Receptors); (ii) will impact all of the other public drinking water supply wells in its path (paragraph 1.5 Potential Receptors); (iii) that a three-pronged approach to the containment, treatment, and disposal of this highly toxic plume is feasible (Remedial Option1 Hydraulic Control); and that this process has worked successfully in the past on other such plumes.

## **2.0 Report Shortcomings**

The report does fall short in certain specific areas however, if revised, will make Option 1 most responsive to the DEC upholding the laws and legislative requirements that govern the cleanup of Superfund sites to pre-existing conditions, as well as providing safe drinking water to the 250,000 residents whose water supply lies in the path of this highly toxic plume and preserving the multimillion dollar economic force and New York State natural resource, the Great South Bay.

**2.1 Health Considerations** Consideration must be given to the fact that this report does not contain detailed information regarding the toxic compounds PCE and TCE that are prominent toxic constituents of this plume, especially any reference to a report written to the EPA by the Scientific Advisory Board in April 2011 detailing the fact that TCE is a known carcinogen entering the human body through any means. Therefore a discussion of the continuous reduction in required levels of TCE by the EPA and New York State DOH from a high of 10 ppm in 1982 (as a mix of total organic compounds) to the current level of 1 ppb continues to be problematic when entering the human body through its “safe wellhead treated” drinking water.

There is also much literature that is available regarding PCE and its possible link to Parkinson’s disease.

By discussing these issues the case for hydraulic containment, central treatment, and the reinjection of contaminated water, treated drinking water standards, is necessary. As of now wellhead treated water is discharged directly into the potable water supply not affording any opportunity to address daily fluctuations in the incoming levels of TCE or other toxic chemicals. It could take as long as 30 days or more for laboratory results to indicate that there had been a spike in the TCE levels that could not be overcome by the existing treatment process and therefore causing higher levels of toxicity to enter the drinking water supply. For example during studies of the treatment process to be used in the Pure X Remediation returning contaminated water cleaned up to drinking water standards, to the upper glacial aquifer, was far superior to long ranged wellhead treatment that was being used in surrounding drinking water wells at that time.

**2.2 Effectiveness of Wellhead Treatment** The absence of any discussion regarding: (i) the history and effectiveness of the ROD, ONCT, OU 1, OU 2 and the actual wellhead treatment of this plume in the Bethpage and South Farmingdale water districts is a major concern. A discussion of the Navy Grumman on-site treatment process including the recovery wells and their performance should have been in the report especially considering the fact that by the time the recovery wells were installed the major portion of the plume was already below and South of the recovery well screens (see reports in 1994-1996 by Gerghity and Miller indicating the plume was at least at a depth of 600 feet at that time); (ii) a detailed discussion of the wellhead treatment programs for drinking water supplies already contaminated with this highly toxic plume is necessary since the wellhead treatment process has proved to be only short-term and ineffective, especially when TCE levels reach 5000 ppb and greater; (iii) a discussion of the reasons for Bethpage to shut down a treatment plan because of the overwhelming TCE levels, and the need to drill new wells outside of the plume is necessary since it indicates how really limited wellhead treatment is in dealing with this plume; (iv) a detailed discussion of the fact that wellhead treatment at Bethpage and South Farmingdale has been far more costly than predicted in the ROD and OU's and therefore the significance of higher costs for wellhead treatment into the future is a dealbreaker for wellhead treatment as more wells become contaminated; (v) there should have been a conclusion discussing the record of wellhead treatment over the past 15 years, as it clearly does not support wellhead treatment as a viable means for containing and treating this highly toxic plume (why did the Bethpage water district shut down certain treatment facilities and drill new wells outside of the plume footprint?).

**3.0 Report Refinements** There are certain revisions to the report that should be made that would make Option 1 highly feasible, ensure that it will work, and reinforce the spirit of Option 1 as the least costly and most effective alternative especially when considering the costs for Option 2&3.

**3.1 Discharge Treated Water to Massapequa Creek** is a bad idea for several reasons: (i) we must recognize that the natural stream flow (of creeks, streams and brooks) throughout Nassau County has been permanently altered over the past 75 years mainly by housing development, roadways and roadway drainage systems along with storm basins (see Nassau County DPW study Meadowbrook Creek). Introduction of the proposed discharge amounts from a local treatment plant in Massapequa would seriously alter the ecology of Massapequa Creek along with the Peter Schmidt preserve and eventually add to higher local water levels due to "mounding" of the upper glacial aquifer that would be created. A treatment facility **must** be constructed on the original Grumman site and the discharge from that facility re injected into the upper glacial and Magothy aquifers. This negates the Cons described in paragraph 2.1.8.4 "Summary" of the report.

(ii) any consideration to discharging treated water to the Cedar Creek Sewage Treatment Facility is also a bad idea since the water being sent, treated to drinking water standards, should be reused and also discharge amounts of up to 19 MGD would have a considerable impact upon the existing unit operations at the facility as with any costs necessary to upgrade



and increase unit operations for the additional 19 MGD; (iii) **Discharging the treated water back into the aquifer should have been discussed in detail so that the water balance equation would enter the calculations and ensure that the underflow of as much as 60 to 75 MGD would be consistent as it is necessary to keep the salinity of the Great South Bay proper;**(iv) the startling revelation in the report that some 730,000,000,000 gallons water would be removed from the aquifer is technically, scientifically, and practically without merit. It requires the consultant do much more research on the sole source aquifer dynamics and its relationship with the surrounding waters especially Great South Bay and equally important to research the phenomenon of sinkholes. (v) The discharge of effluent treated to drinking water standards should be studied more carefully to include reinjection, utilization of certain storm water basins, and introduction in a limited fashion to the headwaters of Massapequa Creek. It seems this was written into the report as a potential deal breaker for full containment and treatment however let's look at it positively the treatment facility must be moved to the Bethpage Navy Grumman site and then treated water to drinking water standards reused by controlled reinjection into the Magothy aquifer, controlled discharge to storm water drains, perhaps a certain amount of controlled discharge into Massapequa Creek and transmission and use at Bethpage State Park.

**3.2 Central Treatment at the Navy Grumman Industrial Site** by treating the contaminated plume centrally at the Bethpage Navy Grumman site several problems involving impacts to local communities are solved: (i) there is plenty of existing land available for a central treatment facility at the Bethpage site and therefore consideration and disruption to communities off-site is solved; (ii) the Bethpage site is already a commercial industrial site with all the requisite traffic and noise; (iii) the treatment facility can be constructed with no impact to a local community and built in a modular fashion and therefore expanded as necessary at the central location; (iv) treatment of the off gases and fumes emanating from the treatment process can be treated to Clean Air Standards and exhausted to an already existing industrial site instead of into local neighborhoods; (v) the need to remove for regeneration and supply carbon to the facility can be done along already existing roadways utilized by heavy trucking and therefore not impact communities or roadways not designed for heavy trucking. In fact a railroad link is also available on the site

**3.3 Duration of Treatment** there are serious doubts about the duration expressed in the report for the cleanup of this highly contaminated plume. In order to project a more accurate duration would require updating the Nassau County three –dimensional- model, or developing a similar *dynamic* model. However the duration is not as important as the commencement of the cleanup operation. Based upon other contaminated sites the projected duration of cleanup necessary to meet pre-existing condition goals are more likely to be less than predicted. For example the Pure X site was projected to run between 35 and 50 years in order to achieve the cleanup goals. In fact it took 27 years for the site to be delisted. Similarly The Firemen's Training Center cleanup was predicted to also run between 30 and 50 years and achieved its goals in less than 30 years. Based on the time of travel of this contaminated plume to date and considering an initial examination of the groundwater occurring in 1960 cleanup should less than 60 years considering that of the plume is allowed to travel unabated to the great South Bay it would

probably region 75 to 100. Of course this is based upon the premise DEC has made the principle responsible parties to a complete accounting of all of the contamination sources at the site. This may not be the case.

**Conclusion with time being of the essence** the report indicates that Option 1 would take approximately 4 years to design and build and commence operations. We have seen this plume contaminate more wells and move a considerable distance in the past 50 years and the longer it remains uncontained the shorter time it will take to reach the other drinking water supplies in its path, and impact and the Great South Bay.

I propose that the DEC use the most up-to-date methods to ensure that the design and construction process takes no more than 24 months from beginning to the start up of the wells and central treatment facility. We have seen how the state can act when they want to especially with the design and construction of the Tappan Zee bridge already substantially underway.

In this fiscal year 2016 Gov. Cuomo has made \$6 million available for the further study of this site. Instead of using it for more studies which we know are unnecessary and supported by this report, that money should be used to immediately retain the proper consultants and contractors necessary to expedite the design construction process.

By utilizing existing state lists for approved consultants and contractors or utilizing an expedited RFP process the DEC should immediately retain a program manager experienced in this type of project and able to coordinate and package multiple design construction contracts. Currently the DEC should fund and retain a design firm to prepare 15 to 20% design documents, (within six months) that would be converted to a design build process for the containment wells. There are sufficient engineering firms qualified construction companies and well drillers within the New York Metropolitan area to complete the design and well drilling operation within 15 months of receiving preliminary design. The same process can be utilized for the injection wells. Similarly the DEC should fund and contract with a qualified design firm to prepare the preliminary design, 15 to 20% design documents (within five months) necessary to convert to a design build process. This process should take no more than 18 months for the plant to be ready to go online. Another similar process should be carried out for all of the piping necessary to transport the effluent water from the containment wells to the Bethpage Central Plant site. Right of ways and state roads such as routes 107 and 135 should be considered. The design and construction of the transmission lines should take no longer than 15 months. Again any piping associated with transmitting plant effluent water, treated to drinking water standards would also take no more than 15 months for the design construction process. This would include transmission to reinjection wells, storm water basins, Massapequa Creek, and Bethpage State Park for use.

Very truly yours

John F Caruso  
516-459-7276 (cell)



**From:** [Denise Strothman](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Groundwater Plume  
**Date:** Wednesday, August 24, 2016 6:22:29 PM

---

I we fully support the containment of this groundwater plume.  
The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.  
This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed. The sole source aquifer water supply must be restored to protect public health.  
Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts.  
including several of them. Be sure to include your name and address or the group you are associated with.  
Please save our water.

Respectfully,  
Denise Strothman

**From:** [Debra Conboy](#)  
**To:** [dec.sm.derweb](mailto:dec.sm.derweb)  
**Subject:** Stop the plume  
**Date:** Wednesday, August 24, 2016 8:35:47 AM

---

To Whom it May Concern,

I am writing to express my full support of the containment of the groundwater plume. As a resident of Massapequa Park with two small children I am very concerned about the quality of our drinking water. The plume must not be allowed to continue to migrate and contaminate more public drinking water wells. This environmental disaster has been going on far too long and the appropriate clean up must not be delayed. Cost should not be a factor in such an important issue. Thank you. Sincerely, Debra Conboy 54 Atlantic Ave. Massapequa Park

**From:** [mhauptmann@earthlink.net](mailto:mhauptmann@earthlink.net)  
**To:** [dec.sm.derweb](mailto:dec.sm.derweb)  
**Subject:** Comment on Bethpage Plume Containment Report  
**Date:** Friday, September 09, 2016 6:34:27 PM

---

Dear Sirs:

Here are my thoughts on the proposed remedial action for the Bethpage plume discussed in the HDR report. Due to the legislature's directive, only hydraulic containment of the plume was evaluated in the report. Hydraulic containment is an inefficient approach to clean up a plume that is miles wide and hundreds of feet thick moving in Long Island's transmissive aquifers. Hydraulic containment pumping will withdraw much clean water along with the contaminated water and lead to inefficient treatment.

Additionally, the discharge of 10-20 million gallons a day of fresh water from Long Island's sole source aquifer to the ocean and bays is not sustainable. Compared to approximately 50 million gallons a day used by each 500,000 people on Long Island it is not a wise use of a fragile resource.

Instead, as implied in the HDR report, a combination of remedial approaches such as source control, in situ treatment, hot spot treatment, and hydraulic containment should be considered to devise a cost-effective and feasible approach for such a complex situation. Part of the hydraulic containment evaluation should include beneficial reuse of the extracted groundwater for irrigation and cooling as well as basin recharge and injection wells. There should be a goal to minimize the amount of fresh water simply discharged to the ocean.

Reuse as drinking water supply should also be considered because some water is already being treated by the same techniques that would be used in a hydraulic containment approach (air stripping and activated carbon filtration). In any case as a precaution wellhead treatment by the water purveyors will need to continue because no remedial strategy could be guaranteed to address 100 percent of the contaminants.

Also I did not see any discussion of radiological contaminants which should be addressed for a comprehensive remedial action.

Michael Hauptmann PE

7 Turnberry Court

Middle Island, New York 11953

**From:** [Monica Telese](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Call to Action - The Long Island Plume  
**Date:** Tuesday, August 30, 2016 8:26:26 AM

---

Dear James Harrington,

It is with deep concern that I submit this note in regard to the clean up of the Bethpage plume. The fact that this toxic disaster has lingered for so long, and is threatening other communities on Long Island, should be of grave concern to your office. While any reasonable person can appreciate the cost implication here, the issue is too serious, and too far along for cost to continue to be the underlying reason for delay.

The plume must not be allowed to continue to migrate and contaminate more public drinking water wells. The sole source aquifer water supply must be restored to protect public health and our quality of life on Long Island.

I am a member of the Junior League of Long Island, and am eager to support the cleanup in any way possible.

Monica Telese  
2499 Bellmore Ave.  
Bellmore, NY 11710  
516-445-1450

**From:** [B. Mannino](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Comments on Remedial Options Report - Grumman Plume (Bethpage)  
**Date:** Wednesday, August 10, 2016 6:14:55 PM

---

To Whom It May Concern at NYS DEC,

I am a proponent of option 3. I am a Long Island native who lives directly south of the Grumman plume in the Nassau Shores community in Massapequa (across the street from South Oyster Bay). While the 'treated' water may meet certain standards, it surely will contain some level of contaminants that would impact water and/or air quality. I think it best that the 'treated' water be moved through the Cedar Creek water treatment facility to 3 miles out into the ocean for further dilution.

In addition, I look at these estimates with skepticism given the level of uncertainty and my financial background. In comparing option 1 to options 2/3, I don't appreciate why expanding treatment at Cedar Creek would cost more to build and operate than a whole new treatment facility. I originally thought this might be driven by the sewer line expansion, but that doesn't really seem to be behind the \$300M+ difference in cost estimate. In comparing option 2 vs. 3, I don't appreciate why taking over use of 3 South Farmingdale wells which are presumably already contaminated would cost more money than creating 3 more new wells.

Option 3 also leads to capital improvements to Cedar Creek which may benefit more than this treatment initiative given Nassau County's ever-expanding population. Even if we didn't have the support of federal funding, New York State has 20 million residents. If over the life of the project we had to each contribute \$30 spread out over the next 30 years (i.e., \$1 per person) to protect the environment, I think we could manage. The incremental cost of option 3 vs. option 1 is only ~\$15/NY resident spread out over a number of years as well making this really affordable to address an unfortunate environmental mess.

I am happy to discuss further,

Brian Mannino  
256 West Shore Drive, Massapequa NY 11758  
516-642-6995

---

**From:** New York State Department of Environmental Conservation <nysdec@public.govdelivery.com>  
**Sent:** Wednesday, August 10, 2016 3:41 PM  
**To:** bmann729@hotmail.com  
**Subject:** Grumman Plume (Bethpage) - Public Comment Invited on Remedial Options Report

[New York State Department of Environmental Conservation](#)





## Public Comment Invited on Remedial Options Report Regarding Full Containment of Grumman Plume (Bethpage)

### Notice of Public Comment Period

**Project Description:** Remedial Options Report Regarding Full Containment of Grumman Plume Released

In response to Chapter 543 of the Laws of 2014, the New York State Department of Environmental Conservation (NYS DEC) tasked one of its Engineering Consultants (HDR, Inc.) with developing and evaluating options to achieve hydraulic containment of the groundwater contamination associated with the Grumman Aerospace-Bethpage Facility in Bethpage, New York.

The report, called the Remedial Options Report for the Grumman Aerospace-Bethpage Facility, was recently completed and submitted to NYS DEC. The report includes estimates of the cost, scope, and timetable for 3 alternatives to contain the plume each project. The report is available at <http://www.dec.ny.gov/chemical/8431.html>.

**Public Comment Period:** NYS DEC will accept comment on this document until **September 9, 2016**. Please submit any comments to: [derweb@dec.ny.gov](mailto:derweb@dec.ny.gov). Please include "Comments on Remedial Options Report" in the subject line of the email. NYS DEC will consider all public input received and assess all options in accordance with Federal and State Superfund laws.

**Contact:** James B. Harrington, NYS DEC - Division of Environmental Remediation, 625 Broadway, Albany, NY 12233-7012, Phone: (518) 402-9625, E-mail: [derweb@dec.ny.gov](mailto:derweb@dec.ny.gov).

The New York State Department of Environmental Conservation respects your right to [privacy](#) and welcomes your [feedback](#). | [Update preferences or unsubscribe](#). | [Learn more about DEC Delivers](#).

Connect with DEC:   



NOW AVAILABLE: [Receive DEC's Twitter feed via email](#).

Andrew M. Cuomo, Governor \* Basil Seggos, Commissioner

**From:** [Bobby Hock](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Grumman Plume  
**Date:** Wednesday, August 24, 2016 12:22:12 PM

---

To Whom it May Concern,

As concerned residents of Massapequa, we fully support the containment of this groundwater plume.

- The plume must not be allowed to continue to migrate and contaminate more public drinking water wells.
- This environmental disaster has been going on far too long and the appropriate cleanup must not be delayed.
- The sole source aquifer water supply must be restored to protect public health.
- Cost must not be a deciding factor in the decision process. The Navy and Grumman should be held accountable for the funds and not the water districts.
- Unregulated and unknown contaminants continue to be discovered and associated with this plume. Protection of public health must be a priority.

We have two small children, and this is of utmost concern.

Sincerely,

Stacey & Bobby Hock

446 Unqua Road

Massapequa, NY 11758

**From:** [Bill Dorsch](#)  
**To:** [dec.sm.derweb](#)  
**Subject:** Comments on Remedial Options Report - Grumman Aerospace Bethpage Facility (NYSDEC Site Number 130003)  
**Date:** Friday, September 09, 2016 9:17:54 AM

---

Mr. Harrington -

I was a long time resident of Bethpage NY (39 Crestline Avenue) and still have family there. I have reviewed the subject document and have serious reservations regarding the proposed options. In general, I find the concept of hydraulic containment of this plume to be technically impractical and economically outrageous regarding the cost to the taxpayers versus the benefits. The time window for extensive characterization and remediation of these plumes in an economically feasible manner has long since expired. They have traveled too far and deep in the aquifer system. I have a number of specific comments/questions but before I get to that I would like to know why wellhead treatment of existing water supply wells is not an option? This would be by far the most cost effective approach to dealing with this issue. The plumes are more than 50 years old, span hundreds of feet of aquifer thickness and are characterized based on a relative paucity of data. Data characterization is crucial to evaluating the effectiveness of a containment/treatment system and based on existing monitoring network and plans for additional performance monitoring I am highly doubtful that the plumes can be both effectively contained/treated and that the effectiveness can be proven. While I am very sensitive to the concept of protecting the sole source aquifer these proposed options make little sense. That said, someone should be held accountable for the delay in just getting to this decision point in 2016. The hundreds of millions of dollars proposed for these remedial options could be more wisely spent addressing other groundwater contamination issues. The following are specific comments/questions regarding the report:

1. When did wellhead treatment of Water Supply Wells from BWD Plants 4, 5, and 6 begin? Based on groundwater flow velocities and the current downgradient extent of the plumes it appears that these areas were probably affected going back to at least the 1960s and possibly longer. Is there any information on what levels of VOC concentrations may have been present in these water supply wells prior to well head treatment being instituted?
2. I am struck by the paucity of data available to characterize plumes of this aerial extent and depth. This is obviously due in part to the extreme costs associated with obtaining subsurface samples from these depths. There is far too much heterogeneity with respect to both the geology and the nature of contaminant distribution and migration pathways. You cannot adequately design a containment system based on the amount of data available nor can you prove it's effectiveness.
3. The volume of sole source aquifer water loss to the ocean with each of these options should be considered unacceptable.
4. I cannot imagine that the discharge of treated water to Massapequa Creek under Option 1 would not have deleterious effects to the ecosystem. In addition, water table mounding in the immediate vicinity (located in the middle of a residential area) would most likely impact neighboring homes.
5. It appears that the containment wells will have only one suction pump with a 250 foot length of screen. It is my experience that the influence of pumping will not be

distributed throughout the screened interval and not effectively capture contaminants distributed vertically over that span.

6. It is not easy to discern based on the information provided but it appears that while Option 1 actually provides for specific treatment technologies to address VOCs Options 2 and 3 rely solely on increasing the capacity of the wastewater treatment plant and relying on dilution to achieve discharge criteria (although the wastewater discharge limits are most likely far higher than surface/groundwater discharge limits).
7. A 200 year period of performance for the treatment system is hard to fathom. I am aware of lengthy attenuation remedies for slow moving radionuclides but operation of a system for 200 years with the associated O&M costs does not seem like a realistic option.
8. Figure 1-10 is pretty important to the understanding of the plume distribution but is missing from the document shown on the web link.

Thank you for the opportunity to comment on this plan and I would appreciate a response to my comments.

Sincerely,

William Dorsch