



November 18, 2013

To: Susanne Miller, Karen Knuuti & Wilkes Harper
Maine Department of Environmental Protection

Re: DEP's October 18, 2013 GAC Chemical shoreline site visit

Dear Susanne, Karen and Wilkes.

Thank you for taking a look at environmental conditions at the Stockton Harbor shoreline of GAC Chemical on October 18th.

This is our response to the two documents we were sent following your 10/18/13 site visit: [Karen Knuuti's memo](#) and the [Wilkes Harper \(?\) powerpoint](#).

Our response, attached, and pasted-in below, is in four parts: (1) Our summary of issues raised by the site visit, and suggested actions; (2) combined observations found within DEP's two documents; (3) those observations **with our comments in bold face**, and (4) a more detailed list of recommended actions for reducing the continuing erosion of the site's historic wastes into Stockton Harbor and Penobscot Bay.

We look forward to working with Maine DEP and GAC Chemical to better the conditions at the site.

(1) FOPB Summary.

The evidence obtained during the site visit documents numerous erosion problems along the property's shoreline. As a result of failing erosion controls, including slumping slopes, inadequate drainage and crumbling wooden cribbing, waste materials stored on GAC Chemical's shoreline during the 20th century are visibly entering intertidal coastal wetlands.

While the exact composition of the waste materials dumped on that shore is not known, sufficient information exists to determine it includes wastes from fertilizer and alum production onsite and that enough was dumped to visibly expand the upland into coastal wetlands.

Erosion of wastes into coastal wetlands is tightly regulated under state erosion control and waste management laws. In particular **38 MRSA 420-C** requires effective control of erosion and sediment arising from *"a human activity before July 1, 1997 involving filling, displacing or exposing soil or other earthen materials."*

The control measures must *"prevent unreasonable erosion of soil or sediment into a*

protected natural resource as defined in section 480-B, subsection 8. This paragraph applies on and after July 1, 2010 to other property that is subject to erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8” (That definition includes “coastal wetlands”).)

The current eroding state of the GAC Chemical company's shorelines bayward of the railroad track does not meet the standards required under this law. Nor is it meeting stormwater control standards.

Phosphogypsum. Maine does not have a phosphogypsum management plan. Given the existence of this material, and strict federal management guidelines at 40 CFR 61, Subpart R, this needs to be rectified. Other states including Florida strictly manage phosphogypsum waste deposition to limit its release to the environment.

We disagree with DEP's characterization of red colored contaminants of intertidal mud and sand as natural leachate from Penobscot Formation iron deposits, particularly in light of a statement by an earlier plant operator Alex Horth, that substantial amounts of "rose colored" spent bauxite ore were dumped onto the shore directly above the now-red-tinted beach and mud.

We also disagree with DEP's assertion that the ecosystem of the intertidal flat closest to the waste area appears similar in quality with that of the rest of the cove beyond the ledge isolating that flat.

In summary, we believe that the site possesses a variety of Recognized Environmental Conditions (RECs) as defined by Maine's Remedial Action Guidelines. We request that DEP follow up its site walk, pursuant to those guidelines, with a more in-depth Phase II Environmental Site Assessment, including borings of the suspected waste fills the beach, and of the contaminated intertidal sediments, at minimum those areas that are visibly impacted by those eroding wastes. In that assessment we would expect DEP to summarize the nature and extent of contamination of the beach and intertidal areas below the property, and make recommendations for further action consistent with the RAG standards

(2) GAC Chemical waste site walk 10/18/13.

DEP's Observations summarized from the memo and the powerpoint.

Upland and Bluff observations

- * Shoreline encroachment via filling has occurred.
- * Surface water runoff from plateau is not managed
- * Slumping & erosion of the plateau is releasing materials onto beach and into water.
- * Wooden cribwork from mid 20th century rotting, releasing fill materials behind them.
- * Existing vegetation upland above some filled areas is thin and scrubby.
- * Gray “soil” found both eroding and in boring tests
- * Sulfur chunks common including upland and shore
- * VRAP ([Voluntary Response Action Plan](#)) cleanup location onsite not clear, despite restrictive covenants on groundwater

Beach and Intertidal Observations

- * Intertidal seeps not visible.
- * Discolored beach and intertidal sediments, red, yellow, orange and white sediments below.
- * Species mix identical to untainted sediments
- * Light colored band along shoreline. Source unknown.
- * Old pipeline to offshore platform.
- * Demolition Debris & ceramic waste found.

Solid Waste Observations

- * Late 1980s soil boring logs don't mention bauxite or phosphogypsum.
- * Former Bauxite Storage area; bauxite, phosphogypsum not seen.
- * Pump house end of property not visited.

(3) Responses to DEP site walk observations

Upland and Bluff Observations Responses

- * Shoreline encroachment via filling has occurred. **Historic photos confirm.**
- * Slumping and erosion of the plateau is releasing materials onto beach and into water. **Aerials, shore visits confirm. Needs remediation**
- * Wooden cribwork from mid 20th century rotting, releasing fill materials behind them. **Confirmed. Needs remediation**
- * Existing vegetation of filled areas is thin and scrubby. **Confirmed, needs evaluation re erosion control, remediation.**
- * Surface Water runoff from plateau into Stockton Harbor is not managed. **Confirmed Needs remediation**
- * Gray "soil" found eroding and in boring tests. **Site visits, records confirm. Needs to be tested**
- * Sulfur chunks dot area including shore. **Confirmed by site visits.**
- * VRAP site location unclear, despite restrictive covenants. **Records confirm. Needs clarification**
- * Light Colored Band. **Confirmed. Source seems to be wood cribbing. Samples should be tested**
- * Old Pipeline To Offshore Platform. **Confirmed by site visits, records**
- * Demolition Debris, Ceramics **Confirmed. Ceramics are absorbent & should be tested**

Beach and Intertidal Observations Responses

- * Intertidal seeps not visible. **Confirmed visible in DEP site map, during site visits and from air.**

* Discolored beach & intertidal sediments, red, yellow, orange and white sediments below. **Confirmed by Site visits, aeriels, DEP files.**

* Species mix same as untainted mud. **NOT CONFIRMED** by site visits, records. Low biodiversity in discolored beach and nearshore intertidal mud (no barnacles, crabs or other crustaceans there) very little rockweed there and that heavily coasted with eroded wastes; rockweed abundant outside (not inside) of intertidal ledges. Ledges channel flow of waters, wastes into limited portions of the harbor

Solid Waste Observations

- * Late 1980s soil boring logs don't mention bauxite or phosphogypsum
- * Former bauxite storage area: bauxite, phosphogypsum fill not seen.
- * Shoreline at north end of site not inspected.

Solid Waste Observations Responses:

1. Filled shores. DEP has documented and mapped the depth of fill atop the site shore.

2. Bauxite The plateau is “**filled land**” composed of “**rose colored bauxite waste**” , according to General Alum plant operator Alec Horth who told this to MDEP's John Sowles in 1998. Sowles was reviewing the site following our complaint then. Bauxite waste aka "red mud" is considered by some authorities to be hazardous waste. Is that what is here?

3. Phosphogypsum. Government & media reports document 30 years of superphosphate making on site, (1942-1970). Phosphogypsum is an unsellable byproduct with a 5 to 1 ratio waste to fertilizer. Where is it? The plateau is “**filled land**”. Horth may have been unaware of the predecessor fill material that the bauxite was dumped upon.

4. Aerial photos show shore expansion into intertidal began same time as fertilizer.

5. North end shore waste piles, significant, eroding, visible documented.

4. NEXT STEPS

A. Upland & Bluff

1. Erosion control needed on side of plateau. Sample, test and terraform to non-eroding landscapes. Move excavated fill to onsite landfill.

2. Wooden cribwork needs to be checked & replaced as needed. Materials inside & behind cribbing should be sampled and tested.

3. Compare upland species of filled land onsite and non-filled land onsite or nearby offsite.

4. Stressed vegetation and soils need examination. Soil treatments or plant replacements to more waste-friendly species as needed.

5. Gray & reddish wastes on surface and eroding from bluff needs to be identified and remediated as necessary.

6. Sulfur waste chunks in soil appear via annual frost heaves and erosion. Are there sulfur-loving plants that would like to be there?

B. Beach and Intertidal

1. Intertidal seeps. Confirm existence using DEP maps, site visits and aerial footage. Test for pH and dissolved metals & sulfates.

2. Contaminated intertidal sediments. Consolidate info, including site hydrology.

3. Test sediments and mud from surface to marine clay or rock, on both sides of the two intertidal ledges & the clam mitigation sandbar.

4. Map extent of waste penetration into intertidal area.

5. Dig up and landfill most tainted beach & intertidal sediments below old acid plant, between shore and first intertidal ledge.

6a. Wild species abundances. Identify birds, fish and invertebrate species living in and using tainted and untainted beach sands and mud on both sides of both ledges near the old acid plant, and both sides of the clam mitigation sandbar.

6b. Sample fishes and swimming invertebrates with beach seines during high & low tides.

C. Solid waste

1. Consolidate maps and documents showing the depth of fill atop the site shore.

2. Test all filled land ID'd by aerials & cribwork as having expanded onto shore after fertilizer production began.

3. Bauxite: Examine documents on alum and bauxite. Sample plateau for "rose colored bauxite waste". Remove and/or cap.

4. Phosphogypsum: Review federal guidelines on phosphogypsum management. Sample plateau's filled land for gray phosphogypsum. Determine its radon output level. Remove and or cap as needed.

5. North end shore waste piles. Sample, remove and/or cap as needed

That concludes our response to DEP's reports on its October site visit and our recommendations.

We request DEP to follow up, pursuant to those guidelines, with an in-depth Phase II Environmental Site Assessment. In this assessment, DEP has an opportunity to summarize the nature and extent of past, present and future contamination of the beach and intertidal area by wastes eroding from the property, and draft action recommendations, consistent with the RAG standards.

We believe that liability protections available via the VRAP program could be an incentive to GAC Chemical to put an end to waste erosion into Stockton Harbor from their property.

Following your response to this review, we'd like to meet with site visit participants to discuss the options for erosion control at the site as well as of determining the nature of the waste materials within the filled shore areas and the potential for additional VRAP activities at the GAC site.

We look forward to hearing from you.

Sincerely

Ron

Ron Huber, for
Friends of Penobscot Bay