

**ST. GEORGE RESTORATION ADVISORY BOARD MEETING
DRAFT MINUTES
MARCH 7, 2000
ST. GEORGE, ALASKA**

The St. George Restoration Advisory Board (RAB) met on Tuesday, March 7, in St. George, Alaska. The meeting was called to order by NOAA Co-Chair Anthony Pierpoint, Ph.D.

Attendance

The following individuals were present:

Louis Howard, ADEC
Andronik Kashevarof, Jr., Tanaq Corp.
Laurence Lestenkof, Tanaq Corp.
Tony Li, Tetra Tech
John Lindsay, NOAA
Debbie Malavansky, St. George Community
Martha Malavansky, St. George, At-Large
Max Malavansky, Co-Chair, City of St. George
Victor Malavansky, City of St. George
Alvin Merculief, City of St. George
Boris Merculief, St. George, IRA Council
Richard Meredith, City of St. George
Laura Ogar, ADEC
Anthony Pierpoint, Co-Char, NOAA
Robert Taylor, NOAA

AGENDA

Introductions, Public Comments, and Approval of Meeting Minutes

A copy of the meeting agenda can be found as Attachment A. A list of the current RAB membership is provided as Attachment B.

Anthony Pierpoint spoke of the importance of having at least one RAB meeting per year on the Islands. The meetings are intended to offer community members the opportunity to provide input, voice concerns, and obtain information concerning the restoration effort. Scheduling meetings on the islands provides the best opportunity to meet those objectives. Dr. Pierpoint also thanked the attendees for taking the time to participate in the meeting.

A motion was made and approved to waive the reading of the previous meeting minutes, and schedule approval of those minutes for the next full RAB meeting.

Budget Report

Anthony Pierpoint presented a brief summary budget report for FY00 spending. A number of projects are in the preliminary stages, and spending for the Fiscal Year was minimal. Spending principally comprised contracts for the U.S. Public Health Service, Tetra Tech, Inc., Genwest, and Columbia Environmental, Inc. It is expected that work will progress rapidly as the season begins, and spending will increase accordingly.

Martha Malavansky requested that the budget report include more detailed information concerning the spending.

St. George Landfill Closure and New Landfill Development

John Lindsay reported that a cooperative agreement with the City of St. George was established to close the landfill. However, closure efforts were placed on hold pending additional study regarding potential health impacts. Tetra Tech, Inc. was hired to conduct a fate contaminant transport study to examine the impacts. Following successful completion of the study, the NOAA Grants Management Division was asked to reactivate the cooperative agreement to the City to begin the closure design effort. Laura Ogar, ADEC, indicated that the study of potential impacts can involve on-site sampling or, alternatively, transport modeling. There was some early discussion regarding which process should be followed. Because of the nature of the rock and bedrock on the site, on-site sampling was not considered useful, and NOAA proceeded with the fate contaminant model. The model examined worst case scenarios.

Tony Li, from Tetra Tech, provided an excellent briefing on the results of the study. Dr. Li has a Doctorate in Hydrogeology, specializing in groundwater modeling. His Ph.D. dissertation was in the area of fractured basalt, providing useful insight into the conditions on St. George. The model used for the study included, HELP (Hydrologic Evaluation of Landfill Performance) and SESOIL (Seasonal Soil Compartment), both of which were developed by the U.S. Department of Environmental Protection. The study found the following:

- 1) The maximum concentrations of the organic compounds (benzene, carbon tetrachloride, and diesel range organics) estimated by the model at the bottom of the landfill are below the Alaska drinking water standards.
- 2) Using the most conservative assumptions, the maximum concentrations of the metals, arsenic and lead, estimated by the model at the bottom of the landfill were higher than the Alaska drinking water standards.
- 3) Using more representative and reasonably conservative input, the maximum leachate concentrations estimated by the model at the bottom of the landfill were below the Alaska drinking water standards.

- 4) An estimated 250 feet of fractured basalt exists between the bottom of the landfill and the water table below. Although groundwater flow and contaminant transport modeling was not conducted, it is unlikely that the island drinking water supply wells, which are approximately 2.5 miles away, would be impacted by contamination emanating from the landfill.

The basic assumptions, objectives, and results of the study are provided as Attachment C.

Laura Ogar reiterated that the model examined worst case scenarios and that the conditions do not indicate a concern regarding the landfill. Martha Malavansky questioned why monitoring wells were not required for the study. Ms. Ogar indicated that, based on policies in place six years ago, wells would be required. She suggested that for this case, based on existing regulations, wells are not required, and also indicated that for the conditions on St. George, monitoring wells are not practical. Max Malavansky stated that it is the position of the City of St. George, that an impermeable [cap] be placed over the landfill. John Lindsay requested that the City of St. George provide a cost and design for installation of the cap, but also indicated there is little funding available to install the cap. He also indicated that he would examine whether a landfill cap could be installed within the limits of NOAA's authority. Anthony Pierpoint pointed out that landfill caps require routine maintenance and that they are prone to leak significantly. He suggested that there may other uses of the funding that would provide a better benefit to the community. Martha Malavansky pointed out the importance of ensuring that the community is comfortable with the actions taken to study, monitor, and close the landfill and ensure the safety of the drinking water. Laura Ogar also pointed out that drinking water is routinely sampled and analyzed to ensure it is safe to drink.

Max Malavansky asked whether NOAA planned to leave a landfill cell open to allow for continued disposal, until the new landfill is open. John indicated there are plans to keep a cell open, however, he also indicated that NOAA is obligated to close the landfill as quickly as possible. Mr. Lindsay further indicated that a cell could be made available for operation for 5-7 years. However, he further indicated that disposal must be performed in a controlled manner.

Laura Ogar provided a briefing on the status of new landfill development. She indicated that it is necessary to develop a community-wide waste management plan. In terms of the basic design of the landfill, the process is straightforward. Ms. Ogar suggested that there will be contaminant issues at the new landfill. However, at a reasonable distance from the landfill there will not be a health concern.

Clean-up Program Status and Schedule

John Lindsay handed out summary materials on the status of the clean-up effort and provided an overview of some of the sites. The work schedule is provided as Attachment D. Mr. Lindsay stated that a contractor would be on the island to conduct global positioning system (GPS) studies, and indicated that training could be made available to the local community.

He also indicated that a web page was being developed which will include fact sheets on the restoration effort.

Mr. Lindsay reported that additional monitoring will be necessary at Tract 46. Martha Malanvansky questioned why additional monitoring was necessary. Mr. Lindsay replied that the previous monitoring was not adequate to establish the full extent of contamination. Columbia Environmental, Inc. will be performing the work.

PCS Stockpile Treatment

John Lindsay reported that thermal treatment systems have been purchased. The thermal treatment systems vendor will have training for Tanaq Corporation. Two weeks of on-site training will be provided. In addition, the vendor will provide three weeks of on-site monitoring during treatment, which is expected to begin in May or June. The treatment system will be a three stage design, to allow continuous operation. However, the system does require continuous maintenance and supervision.

Potential Work During 2001

Work will involve a continuation of existing projects. Mr. Lindsay did add that site characterization work is planned at the ball field and the fuel supply lines.

Next Meeting

Tentatively scheduled for the second week in June, 2000 in Anchorage.

Public Comments/Adjourn

As a final comment, Anthony Pierpoint voiced the importance of allowing community members to lead the RAB meeting. As stated in the RAB Charter, the Community Co-Chair should be the lead with the NOAA Co-Chair providing technical and administrative support. This allows the community to control the discussion and facilitate open communication.

Meeting adjourned at approximately 4:00 p.m.

Attachment A

**St. George Restoration Advisory Board Meeting
March 7, 2000
St. George, Alaska
Recreation Hall**

Meeting Agenda

11:30 a.m. - 12:45 p.m.	Sealing Plant Dedication	
1:00 p.m. - 1:15 p.m.	Opening and Introductions	RAB Co-Chairs
1:15 p.m. - 1:30 p.m.	Public Comments	
1:30 p.m. - 1:45 p.m.	Approval of Previous Meeting Minutes	RAB
1:45 p.m. - 2:00 p.m.	First-Quarter Spending	Tony Pierpoint, NOAA
2:00 p.m. - 2:30 p.m.	St. George Landfill Closure New Landfill Development	John Lindsay, NOAA Laura Ogar, ADEC
2:30 p.m. - 3:00 p.m.	Clean-up Program Status and Schedule Fact Sheets	John Lindsay, NOAA
3:00 p.m. - 3:15 p.m.	Break	
3:15 p.m. - 3:30 p.m.	PCS Stockpile Treatment	John Lindsay, NOAA
3:30 p.m. - 4:00 p.m.	Potential Work During 2001	John Lindsay, NOAA
4:00 p.m. - 4:10 p.m.	Next Meeting Agenda Items Dates/Location	
4:10 p.m. - 4:20 p.m.	Public Comments/Adjourn	

Attachment B

PRIBILOF RESTORATION ADVISORY BOARD

RAB Co-Chairs

Elary Gromoff, Jr.
Tony Pierpoint

Island Co-Chairs

Max Malavansky
Elary Gromoff
Victor Mercurieff

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Attachment C



OF EXCELLENCE AT NOAA

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 Pribilof Project Office
 7600 Sand Point Way NE
 Seattle, Washington 98115-0070

ST. GEORGE MUNICIPAL LANDFILL VADOSE ZONE MODELING COMPLETED

St. George Island, Alaska

February 2000

(CONTINUED FROM OTHER SIDE)

The results of the modeling using SESOIL are as follows:

- The maximum concentrations of the organic compounds (benzene, carbon tetrachloride, and diesel-range organics) estimated by the model at the bottom of the landfill are below the Alaska drinking water standards.
- Using the most conservative assumptions, the maximum concentrations of the metals (arsenic and lead) estimated by the model at the bottom of the landfill were higher than the Alaska drinking water standards.
- Using more representative and reasonably conservative input, the maximum leachate concentrations estimated by the model at the bottom of the landfill were below the Alaska drinking water standards.
- An estimated 250 feet of fractured basalt exists between the bottom of the landfill and the water table below. Although groundwater flow and contaminant transport modeling was not conducted, it is unlikely that the island drinking water supply wells (~2.5 miles away) would be impacted by contamination emanating from the landfill.

Vadose zone modeling of the St. George Municipal Landfill has resulted in the following recommendations:

1. Further groundwater flow and contaminant transport modeling of the fractured basalt aquifer underlying the landfill is not recommended for the following reasons:
 - The vadose zone modeling that was conducted shows that contaminant concentrations at the base of the landfill would be below drinking water standards.
 - Aquifer modeling would further reduce the leachate concentrations at the bottom of the landfill. U.S. EPA guidance specifies a dilution and attenuation factor of 20 for leachate mixing with groundwater below a contaminant source, so concentrations would be 20 times smaller upon reaching the water table. The Alaska Department of Environmental Conservation (ADEC) recommends a dilution and attenuation factor of 13.3 for leachate mixing with groundwater.
 - There are few site-specific groundwater flow and aquifer contaminant transport parameters available and it would be more difficult to derive and technically defend accurate site-specific input data.
2. Further characterization of the fractured basalt aquifer is not recommended for the following reasons:
 - Perched water may exist at the site such that contaminant migration below the landfill could follow a more complex pattern that may be difficult to characterize.
 - The fractured basalt flow patterns are likely controlled by a variety of factors such as variable fracture porosity and permeability due to layering of lava flow texture and composition, glacial deposits, faulting, and secondary infilling of fractures by fine-grained sediments.
 - Accurate determination of hydrogeological characteristics of the basalt aquifer would be difficult and costly. A technical approach to attempt to determine the fracture flow patterns would likely involve the installation of a number of monitoring wells and include such methods as drilling oriented rock core, sealing off and sampling discrete intervals in the bedrock and the use of advanced borehole geophysical techniques.
 - Due to the complexities of fracture flow, a small number of monitoring wells may not clearly define the area of contamination. In addition, boreholes and monitoring wells can sometimes act to short circuit water migrating through the fracture system, providing a direct conduit to the water table below.
3. Any water supply wells installed near the landfill should be tested for organics and metals prior to use.

If you would like additional information please contact John Lindsay, NOAA Pribilof Project Manager, (206) 526-4560.