



Document 522  
POST-ASSESSMENT REPORT

CHAPTER: [University of Texas San Antonio](#)

COUNTRY: [Peru](#)

COMMUNITY: [Vina Vieja](#)

PROJECT: [Vina Vieja Community](#)

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PREPARED BY  
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[Alisha Elmore](#)

[8/11/2010](#)

ENGINEERS WITHOUT BORDERS-USA  
[www.ewb-usa.org](http://www.ewb-usa.org)

## Post-Assessment Report Part 1 – Administrative Information

### 1.0 Contact Information

	Name	Email	Phone	Chapter
<b>Project Leads</b>	Karl Eisenacher	[REDACTED]	[REDACTED]	UTSA
<b>President</b>	Nneoma Duru-Onweni	[REDACTED]	[REDACTED]	UTSA
<b>Mentor #1</b>	Steve Forbes	[REDACTED]	[REDACTED]	Varies
<b>Mentor #2</b>	Robert Nicol	[REDACTED]	[REDACTED]	UTSA
<b>Faculty Advisor (if applicable)</b>	Heather Shipley	[REDACTED]	[REDACTED]	UTSA
<b>Health and Safety Officer</b>	Karl Eisenacher	[REDACTED]	[REDACTED]	UTSA
<b>Assistant Health and Safety Officer</b>	Alisha Elmore	[REDACTED]	[REDACTED]	UTSA
<b>NGO/Community Contact</b>	TPOA / Iliana Diaz	[REDACTED]	[REDACTED]	-
<b>Education Lead</b>	-	-	-	-

### 2.0 Travel History

Dates of Travel	Assessment or Implementation	Description of Trip
7/6/20-7/13/10	Assessment	Assessing Water Well / community

### 3.0 Travel Team

Name	E-mail	Phone	Chapter	Student or Professional
Karl Eisenacher	[REDACTED]	[REDACTED]	[REDACTED]	Student
Alisha Elmore	[REDACTED]	[REDACTED]	[REDACTED]	Student
Robert Nicol	[REDACTED]	[REDACTED]	[REDACTED]	Professional

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**4.0 Safety**

**4.1 Safety Incident Reports**

No Health and safety incidents

**5.0 Budget**

**5.1 Cost**

<b>Expense</b>	<b>Total Cost</b>
<b>Airfare</b>	3,221.10
<b>On Ground</b>	116.18
<b>Materials</b>	0
<b>Other</b>	1,264.64
<b>In Kind Contributions/ Donations</b>	(1,060.46)
<b>Total</b>	<b>3,541.46</b>

**6.0 Project Location**

**Longitude:** 13°28'52" S

**Latitude:** 76°0'55" W

## **Post Assessment Report Part 2 – Technical Information**

### **1.0 INTRODUCTION**

The purpose of this document is to educate our EWB group as well as the review committee on the project and travel issues which must be evaluated after travel and project assessment. The purpose of our trip was to assess the community of Vina Vieja, Peru and the proposed project of a water system, home rebuilding, and the possibility of construction of some roadways and bridges. We have assessed the community's need and the possibilities for meeting those needs. We will make sure that a water system or any other solution is what the community desires and collect necessary data to being the planning and design work for the project. Also, we will get to know the community and learn more about the people, culture, and needs.

### **2.0 PROGRAM BACKGROUND**

Vina Vieja is a small rural community of about 110 families. This community is located approximately 4km from El Carmen District in Chincha. The roads are almost all unpaved and consist of crossing several streambeds. The community is mostly surrounded by agricultural land and many members of the community work on those lands. They currently have no clean water supply, and are boiling water from a nearby stream as the only source of water. Sanitation and sewage disposal is also a major concern. They currently use holes in the ground for these processes and are most likely impacting the possible water resources.

After the two consecutive earthquakes in 2007, many members of the community were also left homeless. They have set up tents nearby the significantly damaged homes. The second part of the program is to help the community with training on how to rebuild homes for themselves and how to properly maintain them. The design of the homes will be focused on seismic resistant construction because of the seismic activity in the area. The community of Vina Vieja has expressed that they wish to be able to do these things for themselves and want the training and understanding to be able to do so. This project will positively impact the entire community and will lead to numerous other improvements and set an example for other nearby communities.

During our assessment trip in July, 2010, we were able to make initial contact with the community through our partnering NGO, Texas Partners of the Americas (TPOA). This trip was a great success and many resources were obtained for the future design and implementation for both the water project and community building project. The community remained involved throughout the assessment trip and showed their understanding and further commitment to these projects.

### **3.0 TRIP DESCRIPTION**

July 6-13, 2010 was the first assessment trip to Vina Vieja, Peru. We were able to gather more information from this trip than we first imagined. Not only did we accomplish gathering information about the well, we were also able to locate supplies, look at structural damage, make good contacts, and locate several AutoCAD files for the area. This information plus the initial maps and information we had prior to the trip should make for a successful design and implementation for the water project and distribution

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system for the community. TPOA made this trip much easier for us, and we look forward to continuing this project.

## **4.0 COMMUNITY INFORMATION**

### **4.1 Description of Community**

The community consists of approximately 110 adobe brick homes spread out over about 2 miles. There is a main unpaved roadway that leads throughout the community. All of the homes are located off this roadway. There are approximately 5 people per home, giving a total population of about 550. The homes are usually grouped in sets of 5-20 homes. There are power lines running along the roadway and each home has its own electricity. The community is surrounded by agricultural land and the nearby agricultural corporation has been willing to work with us on this project.

### **4.2 Community/NGO Resources and Constraints**

TPOA has a relationship established in the community and is helping EWB-UTSA to enter the community. The University of Texas Health Science Center (UTHSC) will also be in the community with students and faculty to reopen the local clinic. TPOA has also offered to donate money towards the water supply project and will be able to help provide us with travel logistics and translators for the trip.

### **4.3 Community Relations**

Due to the established trust and relationship between TPOA and the community, we were able to enter and be accepted by the community very easily. Javier, the community leader stayed with us for the majority of the trip and helped us out during our stay. The community prepared food for the team while staying in the community (preparations monitored by TPOA to ensure it was cooked safely). Everyone knew our reason for being in the community and was willing to provide any assistance that we needed.

### **4.4 Community Priorities**

Before we left Vina Vieja, we held a meeting with the community leaders where we discussed our findings and specified that the water project was the main priority and that additional projects will be analyzed and reviewed at a later date. The community leaders agreed and are completely on board with the project.

## **5.0 DATA COLLECTION AND ANALYSIS**

### **5.1 Summary of Data**

During this trip, we were able to obtain gps locations of the available well and various housing clusters, conduct initial water quality testing at the well, locate potential building materials and estimated costs, obtained reinforced adobe housing information, and

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acquired CAD files of the area. A more detailed report of each of these items is listed in Appendix A.

## **5.2 Mapping**

In addition to the topographic, geologic, and hydrogeologic maps we had before traveling, we were able to obtain location information on the homes in the area. This information along with photographs has been compiled into a Google Earth file that was sent along with this report. A screenshot of that file is below:



## **5.3 Monitoring and Evaluation Data**

During this trip we were able to look at many different options for our project. This includes: a river source nearby, wells, sunlight conditions, wind conditions, GPS locations, location of building supplies and their prices, and determined what type of agriculture was in the surrounding area. Further details of this information are presented in Appendix A.

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**6.0 PHOTO DOCUMENTATION**

More photographs are presented in Appendix B.



**Well that community has rights to**



**Travel / Project Team: Gino, Robert Nicol, Karl Eisenacher, Alisha Elmore, Iliana Diaz (Left to Right)**



**Clinic (left) and Dining Hall (ahead)**



**Main Roadway through Community with power lines**

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## **7.0 PROJECT FEASIBILITY**

Based on the information gathered, the community's involvement, the partnering NGO's, and the contacts made within the area, the UTSA chapter believes that our project goals are feasible and well within the ability of the students and the university. As the UTSA chapter continues its involvement in the community, we believe that the team and the community will successfully complete multiple projects within the area, including the primary water project and the potential structural project including housing and bridges.

## **8.0 LESSONS LEARNED**

### **8.1 Multiple approved mentors.**

Our primary mentor has multiple projects in various countries and a substitution was required when flight restrictions were lifted and our primary mentor was needed in another country. Luckily communication between the Project Leader and our mentor had established a potential substitute with the necessary background to accompany us on the assessment trip.

### **8.2 Telephone Communication**

As with most remote locations, cell phone usage was limited. We were unable to use Sprint phones, and we were unable to locate the appropriate SIM card for an AT&T phone. However, cell phones are available for rent at the airport upon arrival for a substantial rate. On our future trips, we decided to invest in a NEXTEL walkie-talkie. Nextel walkie-talkie service was used by the NGOs, taxi service, and various community members and will provide us with a better means of communication.

### **8.3 Testing Facilities and equipment**

If various testing facilities are needed, contact available facilities within the area and be prepared to bring samples back to the states in your checked luggage. The facilities identified prior to our departure were unavailable or no longer testing and we were required to bring water samples back to Texas in our checked luggage.

## **9.0 MENTOR ASSESSMENT**

On Tuesday morning, July 6, I left San Antonio, along with two engineering students, Karl Eisenacher and Alisha Elmore, for a one week trip to Veña Viaja, Peru. The trip was quite successful from my perspective, since we accomplished all that had been scheduled by the students in their preparation. In fact we accomplished more than we had scheduled. That is a tribute, I believe, to two factors: 1) the student's preparation for the trip was very thorough; and 2) our village contact person, Iliana Diaz (who was also our host in Lima) had established a very good relationship with the community, which made our fact-finding much more focused (and hence) more fruitful. In addition to fully studying the existing well as a possible water source for the community, we visited the entire community, taking photos, collecting GPS coordinates, interviewing people and even receiving some high quality CAD files of the existing water distribution pipeline



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and current land ownership details. We were also able to obtain water samples from the well and from the distribution system, which the students preliminarily analyzed in field and upon their return, in the university lab. In conclusion, I believe that the progress made on this initial visit will really enhance the opportunity to move this project along swiftly in support of this needy and receptive community.

**9.1 Robert Nicol**

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**Appendix A: Data Collected**

**Well:** Diameter, 18"

Metal Casing, ½" thick

Water Depth, 20'; Well Depth, more than 200'

pH, 7.05 at temp 22.9 C

Conductivity, 554mS at 23.0 C

Total Dissolved Solids, 283mg/L

Dissolved Oxygen, 5.53mg/L at 23.0 C

\*Water Quality tests performed using a HACH reader and appropriate probes that were calibrated at the well site.

**GPS Locations:**

NO.	LOCATION	ELEV. (ft.)	LAT	LONG
024	Clinic	640	S -13°- 28.538'	W- 76°- 01.694'
025	Well	810	S -13°- 28.067'	W- 76°- 00.644'
026	Last House (near "dam")	895	S -13°- 27.572'	W- 75°- 59.830'
027	4 Houses	849	S -13°- 27.894'	W- 76°- 00.269'
028	5 Houses	836	S -13°- 27.983'	W- 76°- 00.271'
029	20 Houses	819	S -13°- 27.973'	W- 76°- 00.532'
030	15 Houses	802	S -13°- 28.094'	W- 76°- 00.751'
031	Artesian Pool	777	S -13°- 28.131'	W- 76°- 00.818'
032	Javier's House	747	S -13°- 28.369'	W- 76°- 01.296'
034	3 Houses (by river)	676	S -13°- 28.158'	W- 76°- 01.512'
035	Road Intersection	719	S -13°- 28.486'	W- 76°- 01.532'
036	Bridge*	710	S -13°- 28.521'	W- 76°- 01.605'
037	2 Houses (past school)	658	S -13°- 28.584'	W- 76°- 02.088'
038	School	698	S -13°- 28.546'	W- 76°- 01.763'
039	Last House (western end)	682	S -13°- 28.647'	W- 76°- 01.741'
040	San Alfredo Well	627	S -13°- 29.207'	W- 76°- 02.346'

\* Start of "downtown" Viña Vieja, where approx. 30 homes are located (from Bridge to School).

033	CARE - Home Construction	118	S -13°- 29.856'	W- 76°- 10.020'
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**Building Supplies:**

We were able to locate building supplies from a store in Chinchá, Sodimac. They are able to provide many items and have offered special discounts.

Some general prices from them so far are:

Cement – 17.20S / pack or 688.00S / 40 packs

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Wood – 1X8X12 23.70S

Plywood Sheets around 56.0S

Steel Reinforcement Bars – 5/8" X 9m 41.30S, 1/2" X 9m 26.60S

\*S is local currency, Soles. Exchange rate is ~2.75 during trip.

**Reinforced Adobe Construction:**

We were able to meet up with another organization in Peru working specifically in Chincha / El Carmen, CARE. They were able to take us out to some completed reinforced adobe structures and give us plans from those buildings. We will continue to look into this option and conduct more research on it. Some pictures from these buildings are in Appendix B.

**CAD Files:**

We were able to obtain CAD files of the area from both the City Engineer in El Carmen and from an Engineer at Bamar. These give us information on ownership of land in the area, locations of current utilities and pipelines, and accurate distance information. Some screenshots from these files are below:



This shows Vina Vieja in the center of the picture. The main roadway runs to the top right of the screen along with pipelines from Bamar.

**Other Data:**

We also learned that during their winter months there is mostly cloud cover with little sunlight coming through. The main river nearby does not have visible flow (there are underwater sources still during the winter however). There was very little wind while we were there (we had a weather station). Wind was only present for a few hours during the afternoon and averaging about 4mph during that time. The area was surrounded by agricultural land belonging to Bamar and an agricultural co-op. The main crops in the area are tangerines, cotton, and avocados.

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**Appendix B: Photographs**



**Testing Well Water**



**Rio Matagente, Main River in area**



**Electricity to Homes**



**Water Channel, used for washing clothes and Bamar irrigation**



**Structural Damage from Earthquakes**



**More Damage**



**Elementary School**



**Housing in the Community**



**Tangerine Fields**



**Reinforced Adobe Construction**



**Reinforced Adobe Construction**



**Foot Bridge**