

1733 ARCHIVAL TRANSLATIONS-SPANISH TO ENGLISH

by JACK HASKINS

CONTRATACION 5147- 1733 Flota

FROM: Alonso de Herrera Barragan

TO: Senor Don Francisco de Varas y Valdes- President of the Consulado of Cadiz

My Dear Sir;

“On the 13th of July (1733) we sailed from the Port of Havana with good weather, and the following day, 14th, ; discovered the land of the Cayos de la Florida. At 9 that night the wind began rise out of the North, then it freshened to the point where we knew a hurricane was imminent. We found ourselves close to the expressed Cayos and the wind and seas were very strong making it impossible for the ships to govern themselves. Each hour it increased with major force. On the 15th signs were made for the Flota to head for Havana but we were unable to do so for the wind came around to the south without slacking it’s force or the seas.

At 10:30 of the night of this day we all grounded in the expressed Cayos, at a distance of 28 leagues on length, with this Capitana off the one called Cayo Largo 2 1/2 leagues from shore.

I make assurance to Your Lordship that it was fortunate that we grounded this ship, for if the contrary had occurred we all would have drowned since the hold was so full of water, so much so that we were unable to pump it out and it was steadily increasing. We now found ourselves without a main mast or mizzen, having blown the tore sail and the top fore mast complete with it’s sail.

The storm lasted 30 hours, more or less.

At sunup on the 16th, the storm having abated somewhat, e set about with the task of salvaging the people from this Capitana with our launch and boat. Although we were badly battered from the blows we had suffered within this ship we didn’t lose more then two men from this ship, they having been flung into the sea from the Gallineres (?). (Probably the crow’s nest)

The same was executed by the other ships except the San Ignacio, it’s Captain Don Christoval Urquijo, which had made different pieces on the reef and from which only 10 or 11 men were liberated. The Captain and some of the merchants from this ship were drowned.

Likewise the sea swallowed a Fragata which was going to San Agustin de la Florida and from which only one man survived to give this relation.

The Pink Populo and the last Aviso to come from Spain grounded at the Cabeza de los Martires, 12 leagues (north) from this Capitana. They were found without any people it not being known if they went in its launches to the land of Florida or what. Neither is anything known of the new ship from Havana, no part of which has been found. Pray God it was spared.

The salvage operation began on the 4th day after our grounding and to this day all of the silver which has been sent (to Havana) has been from the Capitana, Almiranta, and Infante. Everything that could be was salvaged, notwithstanding the fact that efforts are being made to see if more can be encountered. Some of the cochineal and indigo has been saved although it as badly treated (wet).

I don't think we will have to remit more than a little of that which was salvaged from the ship of Murguia, since it is being off loaded at the small canal where it grounded in efforts to sail the ship into deeper water. I think this ship will be able to return to Havana (with its cargo). The same effort is being made with the Fragata of Don Antonio de Chaves, although the outcome is doubtful for the shallow water in which it grounded.

On the 17th Our Commander, Don Rodrigo de Torres, sent one launch to Havana to give an account of our losses. Notwithstanding the fact the storm devastated Havana we brought them the story of our misfortune as well. The Governor of that Plaza dispatched a balandra (one masted sloop) to scout out the area at the mouth of the Canal of Bahama to satisfy his doubt as to our fate).

Upon learning our fate he afforded aid with ships and supplies, as was executed by him and the Royal Officials of the city. He sent us up to 9 ships with distinct provisions which we passed out in moderate ration, supplemented by the supplies we were able to salvage from the expressed ships of Murguia and Don Antonio de Chaves. Even so, we were on short rations.

In these expressed ships we are remitting the silver to the Havana for accounting and relation by disposition of Our Commander with agreement of the Deputies of this Commerce, conforming to that which was salvaged from the named ships. Upon completing all this, the silver was placed in the Castillo de Fuerza where it is free from danger of seizure by pirates or wreckers that occur in these seas and who are now largely knowledgeable of this loss.

Considering the merchant ships, I don't know if the divers have started salvaging them yet, since some of their cargo was tobacco in leaf form and badly wet and of little use. However, they are presently making arrangements to get what they can.

I have placed this account in the notice for Your Lordship and I pray for God to expand the life of Your Lordship for many years, etc.

Dateline Key of Matacumbe El Grande, on 12 August 1733

Signed Alonso de Herrera Barragan

Carta of 21 (?) 1734

FROM: Alonso de Herrera

TO: Don Francisco de Varras y Valdes (President of the Consulado de Cadiz)

To paraphrase this letter= He mentions that on the 8th of that month the Fragata Incendio, accompanied by El Gran Poder de Dios, sailed for Cadiz from Havana along with an Advise Boat from Cartagena. The Aviso and Gran Poder de Dios returned to Havana because they were taking on water. The Incendio continued to Cadiz.

A Balandra from the Real of the Capitana at Matacumbe arrived at Havana with 10 cannons; one of 18 pounds shot, and nine of 12 along with other hardware and equipment from the Almiranta.

Carta of 19 August 1733-

FROM Juan Tomas de la Herrera & Diego Angulo

TO: Our Senor the President & Official Judges of the Casa de Contratacion.

“On the 13th of July the Flota of Don Rodrigo de Torres sailed from this port to the one of Cadiz and after two days into this voyage a strong storm overcame him. We feared he may have come upon some difficulty in the Canal of Bahama and with this notice we prepared some ships with different people of trust who with all speed and effort were to repair to these places. Before they could sail, a Balandra entered this port (Havana) that was going to Porto Belo, it's Captain Don Nicolas de Arechavaleta with the notice of having seen 12 large ships grounded at the Head of the Martires, which cayos are close to us, that according to what he could perceive was the last departed Flota.

Immediately we outfitted all the ships that were in this port, together with the aforementioned Balandra, which all told were nine in number. These ships were equipped with sufficient people and all were filled with plenty of provisions. Within 24 hours all the referred left for the Canal of Bahama and Cayos at its entrance to aid the mentioned Flota.

After making the voyage with all brevity they found the wrecked ships which comprised the Flota with the exception of the one named San Joseph, alias El Africa, which was lately constructed in this place (Havana) and whose whereabouts still is not known. This aid arrived very timely, but if there had been a delay of several days many of the people would have perished because even though some of the ships still had their supplies the distance between camps coupled with the inconvenience of the situation was so great it would not have permitted them to help each other.

This prompt aid and the 40 divers which were sent in these rescue ships was the major alleviation of those who were shipwrecked. The first thing done was to commence the underwater search (salvage or buceo) which was executed with all effort, salvaging all the treasure from the Capitana, Almiranta and Refuerzo (Infante).

Conducted to this port were 3C 2 boxes of silver coins, all of which remain impounded in Castillo de Fuerza with proper separation. We expect that within days that which is lacking will be with this. At the same time the Cochineal and Indigo which they can salvage from the water is being conducted here along with the baggage of the said squadron. They are salvaging all they are able to of the warships and merchant ships. We continue with major vigilance and application we will keep Your Lordship informed on the first occasion.

God guard Your Lordship, etc.”

Signed Juan Thomas de la Herrera and Diego Angulo

Dateline Havana, 19 August 1733

Letter of 25 September 1733

FROM: Alonso Herrera Barragan

TO: Don Francisco de Varras y Valdes, President, Consulado de Cadiz.

My Dear Sir:

“In the Advise Boat which sailed from this port for Cadiz on 21 September I gave account to Your Lordship (Our Senor) of that which has occurred up to now and, considering it to be a small ship and the fortunes of the sea being what they are, I am sending a duplicate with the squadron destined to sail next. This will carry registry and be under the command of Don Miguel de Equino.

In the Advise Boat of 21 September I gave account to Our Senor of our loss upon the reefs of the Canal (of the Bahamas) on the North side, along with notice to Our Senor of having salvaged all the treasure and conducting it to the Royal :Castle of Strength (Castillo de Fuerza) of this Plaza (in Havana). Wherein there lacks but 7 boxes of silver coins from the Capitana which, in spite of our many efforts, were not found. The diving continues with different crews of divers in case of any mischief among them.

After the Deputies of Commerce reached land safely: they came to the Real (camp) of the Capitana where they held council and determined at this meeting to place Deputies in the Reales of the Capitana and Almiranta for the account of their divers. These which started on the Capitana did so on the 20th of July and on the Almiranta the 22nd, and afterward the Infante, followed by all the merchant ships. They placed guards convenient to the regard of the Royal fortune (not withstanding that the distance from this area to the beach is very great and they would not be able catch everything) and likewise they placed guards on the ships that left this plaza with the supplies for our aid. Since the salvaged wealth in them will be great, firm knowledge of the Captains had to be taken, and each was obliged to enter all, giving it to the Royal Officials and Governor of this city.

These ships were also escorted with infantry and with an Official for its further security.

In this manner, transported without any separation was the amount of 3917 boxes of silver and between them some bars of silver. One thousand nine hundred twenty three boxes came from the Capitana, 1809 from the Almiranta, and 185 from the Infante, along with 153 loose bars; and with 48 boxes of fabricated silver from the Capitana, 25 from the Almiranta, 4 from the Infante, and 1 from the navio San Ignacio. All this wealth was placed the Royal Castle of Strength.

From this amount some 100 boxes of coins were debited to the Deputies of the Commerce to satisfy the account of the supplies taken to the appointed Reales of the Capitana and Almiranta, which were further disbursed to the aid of the other ships, and likewise for the expenses of the divers, launch workers, beach workers, and fleets of ships. Four boxes of silver coins from the wealth of the treasury were entered into the master of silver and treasurer of this Flota Don Balthesar de la Torre, which will be for paying for the furnishings and crews of the expressed 3 navios to the respect of 20 reales per ran per day (A per diem offering with found-very good money for the time).

We assisted some naval personnel, infantry, armory officials, and passengers, some with 50 pesos and others with 100 and 250 according to their pay and work in the Indies trade.

The passengers were given 300, 400, and 500 and some more, those who carried dispatches for the carrying of money (permits).

At the Real of the Capitana the deputies on hand represented to the Commander on Rodrigo de Torres and to me, in confidence, that certain individuals of this Commerce had lost certain partidas of pesos in the merchant ships which had been entered 'sin registrada' (not registered) to be delayed and preserved for cases such as this or for entry in other ports. (Gets a bit vague and legalistic after this). And that if they be allowed to register this they will give depositions as to it's cost of salvage and that they represent that they have not donated it and that we don't know where these partidas are nor whose owners they are nor is it for certain it has even been salvaged because this wealth wasn't lost since they offered it to us.

We do represent to His Majesty that it is vouchsafed, not misleading them and that under this all partidas will be salvaged but that it will be necessary for them to pay double taxes on the partidas (derechos dobles) and that the divers will gain from them the dress at the tent of the country where we reside to incorporate the partidas with the other treasure. In this belief they executed it and they have gathered in the aforementioned tent the partida of 236,247 pesos being the major part salvaged from the navio San Joseph y las Animas, giving me part of this. (Somewhat complicated legal terminology)

The presence of my order designates who remains to collect these and other things of whatever wealth, etc...

The Capitana contained 592 slabs of copper belonging to His Majesty, from which amount the divers salvaged 550, lacking 42. The Almiranta had 517, from which 438 were salvaged, lacking 79. It is expected that the remainder will be salvaged or at least part of this. Pertaining to the Cochineal an Indigo of all the ships of this Flota the majority was salvaged, and it is very fortunate for it is very muddy notwithstanding this was given the benefit of being placed in the sun to dry to the end of receiving from it what could be saved.

The Commerce and it's Deputies had different meetings in this port for that which was delivered under surety bond, the silver of each interested party for the profit of sweetening it, for it is great injury that it suffered from the salt water, (Cleaning process to remove the silver sulphate from the coins, etc.) and that executing this it was restored another time in good condition to the expressed Royal Castle of Strength (the rest of this theme dwells on whose responsibility it was for cleaning the coins and at what expense, to whom, etc.

That is what has transpired up to now, to notify Your Lordship at whose obedience I remain. I pray for Our Senor to swell the life of Your Lordship as many years as desired.

Dateline Havana 25 September 1733

Obliquity I Kiss The Hand of His Majesty

Signed Your Affectionate Servant, Alonso de Herrera Barragan

RELATION OF THE PLACES IN WHICH ARE GROUNDED THE SHIPS OF THE FLOTA UNDER THE COMMAND OF DON RODRIGO DE TORRES

1. Capitana

2. Infante

3. El Duque

Cayo de Tavona or Boca de Herrera (sic-Guerrero)

4. Chaves

5. Tres Puentes

6. Herrera

7. Balandra that was going to Florida

Cayo of old Matacumbe and those before it. They placed the Real (camp on this Cayo for the bad situation of the horse flies (on Tavona)

8. Poder de Dios

9. Murguia

10. San Pedro

Cayo of Matacumbe the Younger (Lower Matacumbe)

11. San Francisco

12. Almiranta

13. Tern

Cayo de Vibora (Long Key)

14. Sanchez Madrid

15. Sanchez

16. El Sueco

Cayo de Vacas of the East (Eastern Vaca Keys)

17. San Ignacio

Cayo de Vacas of the West, from this escaped 12 people.

18. El Floridano

It was swallowed by the sea according to notice from the one who escaped from it.

19. El Pinque

Head of the Martires

20. El Aviso

Cayo Viscayno (Elliot Key)

On the two above ships (19 & 20) they encountered the first almost sunk entirely and the second anchored without rudder, with flags flying and in good condition. No boat or launch was seen on either, but some think they were used to go to land—to which purpose no one up to the present knows. Others feel that with the motive of passing by these places some English ships may have picked them up.

21. El Navio Nuevo (San Joseph alias El Africa of Daniel Huboni)

I don't know of it, but with the intelligence of having seen it with all its masts at the time the wind shifted to the south it is possible it may have disembarked (the Canal of the Bahamas and continued its voyage to Spain. God permit this to be true.

The ship El Rosario has had the fortune of being salvaged from the place where it grounded. After unloading, the ones of Sanchez Madrid (El Poder de Dios) and Chaves have had the same experiences.' (Interesting)

AN ACCOUNT BY THE MARQUES DE CAVECAS, GOVERNOR OF HAVANA

HAVANA 18 AUGUST 1733; Events which happened to the Flota under the command of Chief of Squadron Don Rodrigo de Torres;

“On the 13th of July 1733 the referred squadron sailed from this port with winds from the East and clear horizons. This continued until 8:00 PM of the night of the 14th when the wind changed to the North fresh, with bad atmospheric conditions and with increasing violence.

On the 15th it went around to the south and to other directions of the compass according to the trial of these coasts, which occasioned me to pray fervently for those in the hands of the bad effect of this in the mouth of the Canal of the Bahamas (where I now consider the squadron to be). This sorrow obliged me on the 19th to dispatch a balandra toward the motive of bringing me notice of the state of it.

I awaited this with great impatience until the 21st, when fears were confirmed by Don Matheo Arechavaletta who arrived to this port with the motive of passing on to Cartagena. He said he saw 12 large ships grounded in the Cayos of the mouth of the Canal. Without waiting for a reply from the balandra which I had dispatched on the 19th, on the 22nd I promptly prepared 9 balandras with provisions, munitions, divers, gunners, a company of Grenadiers with all its officials, and the shipbuilder Don Juan de Acosta with the intelligence of his experience and long active service in these matters (like the one which had happened . gave them the instructions and orders which I deemed necessary to rise up to the prompt help of those shipwrecked to remedy their needs. I also discouraged the robberies which are practiced in similar occurrences with the proper people of war. I gave instructions on the securing of the treasure which is to be remitted to this Plaza and principally from the English city of the Providence which when learning of this will approach with some wreckers. We shall take major care and vigilance in the transportation of the treasure.

On the 25th a launch entered from the Real (camp) with Don Francisco Sanchez de Madrid who gave me extreme notice of the unfortunate happening. Next, at nightfall, Don Raymundo de Soto arrived with a letter from the Chief of the Flota asking me for

arms, munitions, and all other things which I had already provided in anticipation of his notice.

I duplicated a balandra to Vera Cruz on the 26th, explaining what had happened to the Viceroy of New Spain, asking him for supplies to make up for those the ships lack, respective of their being able to take advantage of very little in the loss.

From the cited 22nd I have not stopped providing supplies, divers, and armed ships of war, without reserving any of what was found in this port. The provision of water has been of the most need, all of the Flota being short of this. It was therefore necessary to fill all the ship's casks & barrels, and to employ barrel makers and squid catchers, besides buying bottles to ease this very great necessity. This is due the fact that from the voices that break forth in the rising number of people that comprise the camps of the ships, there was no other than water, water, water!

Although I was desiring with great anticipation to make a present to Your Lordship of the salvaged proceeds. I had to command toward this end the registry which came here destined for Spain, and another difficulty was in finding a ship to serve this purpose, and considering the fact that I had committed all the artillery and water to help the shipwrecked this end was now impossible.

All of the proceedings which I gave on this particular subject I give with much happiness that there has not been experienced the most dire necessity in these encampments and there has been assistance with much vigilance and promptness to the salvage of the wealth which to this date has been secured on land. This salvaged material is from the Capitana, Almiranta and Infante and is being transported to the Royal Castle of Strength and it amounts to 8,163,000 pesos with anticipation that within the coming month the rest will be at this Plaza.

To the above said a portion of Cochineal and other fruits accompany it and although there was some loss they took advantage of most of these fruits.

With the notice on the 16th that the deck being built for the packet boat was completed in Matanzas, the Deputies of the Flota bought it for the purpose of pressing advice to these Kingdoms with the notice of the happenings. On board, in behalf of Chief of Squadron Don Rodrigo de Torres, is Don Jullian de Arriaga, and in behalf of the Commerce is Don Juan Clemente Sanchez.

This is what has occurred up to this hare.

Dateline Havana, 18 Aug 1733

Signed Marques de Cavesas

FROM INDIFERENTE GENERAL 2300 - 1733 Flota

Petition to His Excellency for Josepha Forti

Excellency Sir;

Sir:

“For Donna Josepha Forti, citizen of this city of Cadiz, widow of Don Christobal Urquijo, Lieutenant of Navio of the Royal Armada and Captain of those ships named San Francisco and San Ignacio whose property was navigated to New Spain under convoy with the Flota of Commander Don Rodrigo de Torres. With the kindly rendition, he said that they had loaded the two ships with different valuables which are registered with the Principal Accountantship of the Royal House of Trade of the Indies for the account and risk of the husband of the petitioner, which amount appearing in them was 80,000 pesos, which comprised the total of his wealth.

Having applied to His Majesty with memoranda it was resolved not to make a determination until the arrival of the sailors who conducted the wealth, or the wealth from the salvage effort proceeds from the San Ignacio which was one of those that wrecked in the loss of the Flota and within which was drowned her husband who lost 40,000 pesos effectively that he carried for his account, and two boxes of worked silver of his use and 14,500 pesos which he was given at Vera Cruz by Don Pedro Sanchez de Santa Maria to give in the City of Cadiz to Don Joseph Duque, all without registry.

Undoubtedly the total was more than 200,000 pesos, leaving the petitioner (because of this fatal occurrence) in a very deplorable state of misery and poverty with two young daughters. As their guardian and overseer, because of this lack of goods, she is unable to feed and educate them, and because neither she nor her daughters is responsible for the wealth coming out of registry nor responsible for the motives of them it appears to be an injustice.

I appeal to Your Lordship to provide by Your High Grace which is accustomed to the justice of such misery as entered here, and to be able to abide of the money and worked silver that came which was salvaged in the presently arriving ship, that from the San Ignacio the 54,000 pesos of Plata Doble and two boxes of worked silver, paying double taxation to His Majesty as is usually done in such cases. In this the petitioner and her daughters deserve of the nobility of Your Lordship.”

Note; This supports the theory which I had that Don Joseph del Duque (Owner of the San Joseph y Las Animas) was in collaboration with Don Christobal de Urquijo in smuggling certain goods. Probably Urquijo and Duque would have split the profits of a total amount of 250,000 pesos had they made it to Spain.

FROM INDIFERENTE GENERAL 1987- 1733 Flota

FROM: Don Francisco de Vara y Valdez

TO: His Excellency Senor Don Joseph Patino

My Dear Sir;

“I gave notice to Your Excellency of how the new ship built iii Havana named Senor San Joseph has entered this bay (Cadiz). This ship has an alias “El Africa” and is commanded by Don Daniel Huboni. When they made landfall the Lieutenant of the said ship, Don Francisco Perez de Claras and the ship’s notary Don Antonio Prieto declared the following:

“The Flota left under the command of Don Rodrigo de Torres on the 25th of May from Vera Cruz. They entered into the port of Havana on the 24th, 25th, and 26th o June where they remained until the 13th of July when they left the expressed port of the Havana. The Flota was comprised of 19 ships; 5 of His Majesty’s named El Rubí, El Gallo, El Infante, El Africa, and El Pinque Populo; 13 merchant ships and the advice ship of the council. They proceeded to the Entrance of the Canal of the Bahamas and on the night of the 14th there came upon them a storm out of the North of such qualities that at 2 AM this ship (El Africa) was forced to run before it, without having seen any other ship of the convoy since midnight. At 11 AM of the next day and within two hours they lost the main mid mast and mizzen top mast. At 6 PM the wind came upon them very strong from the South which lasted all the following night. At daybreak on the 15th it started to calm. By jury rigging the fore mast sail they made their way to Key Largo where the currents were less severe and they anchored with two anchors in 40 brazas of water. (About 220 feet)

At this site they discovered on the 17th two lost ships, and after a while they were able to launch a boat to the water to go out and reconnoiter then. The ships were found to be the pink of His Majesty named El Populo and the Advise Ship of the Council, whose people they picked up around it on the said day and the following day and conducted them on board their ship (El Africa). Immediately they started jury rigging the ship to be able to resume their navigation.

On the 24th of July they made sail from the mentioned site of Key Largo and proceeded on their voyage to Spain. On the 16th of August the wind came upon them very strong from the East, obliging them to run before it with the fore sail. Returning to resume their course they found themselves short of supplies with the additional people of the Pink and Aviso and all the calm periods.

Next they saw the Isle of Fayal and arrived to it on the 7th of this month (Sept) where they took on some provisions and they left this port on the 14th, continuing their journey to this Bay (Cadiz)

Although they saw at some distance a few 5 strange ships they didn’t speak with them for the reason of not wanting to delay their navigation. They were unable to give more information than what has already been expressed.

The only addition to all this is that while at the Isle of Fayal a registry ship arrived from the Canary :sles which had come from aracas, and they said that they had suffered through a bad storm on the 16th of August and they gave notice that at Caracas two more

registry consignments were ready of the Company of Guipuscoano, all of which were ready to sail in July.

The cargo which this ship (El Africa) carried was comprised of 4782 bags and sacks of tobacco powder, string, and leaf for the account of His Majesty in accordance with a note manifested for me by the ship's notary.

No letters came in this ship and only I have added the 3 adjacent letters for Your Excellency and that is as much of this occurrence as I am able to impart for the Royal intelligence of His Majesty.

Our Senor Grant to Your Excellency as Many Years as he Desires,

Dateline Cadiz 25 September 1733

Signed Francisco de Varas y Valdez

T0: Excellency Senor Don Joseph Patino

FROM INDIFERENTE GENERAL 57- De Torres Diary - 1733

“This is a diary of what occurred during my unfortunate mishap-

On the 25th of May (1733) we left Vera Cruz, having been delayed the 15th, 16th, and 17th by lateness of the arrival of the silver and, afterward, the other fruits of the land.

Contrary winds delayed my crossing to the Havana until the 25th, 26th, and 27th of June when I saw anchored here all the ships of my Flota and the cargos and fruits of the land were loaded in good time and I was ready to sail on the 13th of July. Prior to this, regard was given to the conjunction (new moon) which was made after the 11th, giving care to observe its strong turbulent effects for two days afterward.

July 13th-

At 7:30 of the morning of this day I left the port with little wind from the southeast, the horizons were clear, and one hour afterward I was at the head awaiting the other ships to come outside. At this time I took advantage of the wait in taking in the launch and to tie down the anchors in their place. Afterward, I sent the boat to the ship of Therry and to the Advise ship to pick up 12 sailors which I had given them.

Since my ship was to windward of the others, I crossed over in front of them to pick up my boat which I reached a little after 11:00 AM. I then stowed it within and by now I saw the 19 ships of my Flota, including one balandra and one fragata which were destined for Florida (San Agustin). At 12:00 I trimmed the sails, being now about 2 leagues from port, North-South with it and with a strong breeze from the ENE.

At 3:00 PM I changed course to the SE which I maintained until 6:30 when I tacked 1 and 1/2 leagues from land. We were now two leagues from Jaruco and 12 from Havana with the bow to the North and 1/4 NE which we maintained all the rest of the night, trimming the sails accordingly to maintain myself with the rest of the ships.

July 14th-

From daybreak we put on more sail in order to see the cayos at the mouth of the Canal of the Bahama and at 10 AM we saw the land. At 12:00 I recognized this to be the Cayos to the West of the Vacas. At this hour I changed course with the bow to the SE, being about 2 to 3 leagues from them. At 3:00 I changed course again with the bow now to the North, the wind persisting from the ENE with veiled horizons. At 6:00 PM the West point of the Key of Vaca bore to the NNW. I tacked with the bow to the ESE and at this time the Florida Fragata arrived off me.

I continued on this tack until 2:00 AM and I always saw to it that my farol (light) was shining (for the rest of the Flota to follow). At 7:00 PM I took a reef in the malt, top sails, and the wind now freshening from the NN and with an accompanying rise in the seas. I took another reef at 8:00 PM and at 9:30 I furled the top sails, there now being more wind and now from the north. I furled the secondary sails (Gallants) over the mast head caps because the other ships were to leeward of me. By 2:00 AM I had reefed all the others except the two main sails due to the steadily rising winds. Since it was a clear night the ship withstood it well, without torment, the expressed appearance being that we were governing toward the East.

July 15th-

At 5:30 AM, having now 11 ships (in sight), I placed the signs for making the tack to turn around (go back to Havana). To execute this I furled the main sail and trimming the fore sails we put the bow to the West. By 6:00 AM much wind came upon us, forcing us to furl the main sail and to continue with the expressed fore sails until 9:00 AM when the sky and horizons became obscured and the ship was not able to follow its course.

For having arrived at Cayo Largo and Cavesa de los Martires (Head of the Martires), I fell off to leeward with the fore sail and two spars, governing toward the South, but the heavy wind and seas did not permit us to govern the ship well with the bow toward the East, and on the starboard side with the fore castle below the water almost capsizing the vessel. To be more secure we resolved to change our tack to Port. We fought the storm thus all day until 10:00 PM when we attempted to tack to port to ride more securely, bracing the fore sail all around with all the preventer braces and preventer sheets. Aided by the wall of this strength we ran toward the South until 11:00 PM at which time the sea was so great and the wind impetuous, forming one great inundation, the wind rising with fierceness producing steep seas.

The ship was now unmanageable with the bow toward the East, and with the starboard rail and fore castle under water the ship was now in danger of capsizing for being unable to right itself, while at the same time the ship was taking many blows from the seas to windward. It appeared to the Head Pilot Don Rodrigo de Guerrero, to the ship's Captain, and to some other officials that it was necessary to cut away the main mast, which they did. This carried over to the mizzen mast, while at the same time the top mast of the fore mast fell away, depriving us of all masts by 1:30 AM. This action served to right the ship somewhat. The wind finally tore away all the fore sails, even though they were well secured, and the yard arm fell away into the sea.

We remained this way, helpless in the seas, unable to do more than keep up work on the pumps and to lighten the between decks spaces of cargo.” (Document illegible, will translate more later

FROM INDIFERENTE 57 - Diary of the Infante 1733 July 13th-

“With all the fleet under sail we left the harbor of San Christobal de Havana at 10:00 AM with fair woods from the 3E and clear horizons. After leaving El Moro and outside in the open sea, the wind cane upon us from the ENE. We stowed the launch and boat and set course to the north. At 3:00 PM we changed course to the SE until sundown when we set our course to the N, now finding ourselves North of Jaruco about one and one halt leagues.

July 14th-

We continued our course to the North and at 10:00 AN we saw the land to the West of the Vacas Keys, and at noon we were about 3 leagues from them. We then changed course to the SE until 3:00 PM when we tacked to the North. At 6:00 PM we were off the West point of the Vacas, N 1/4 NE, and at this hour we changed course to the ESE and reefed the main topsail. At 7:00 PM the wind changed to the NNE and by 10:00 PM it had gone to the North. The top mainsails were taken in with all the reefs, ant at midnight we reefed the remainder, leaving only two mains with o’or course to the East.

July 15th-

At daybreak we brought down the top gallant sails and at 6:00 AM we furled the mainsail and the mizzen sail with its reef bands, taking in the sheets and likewise the main sheets. Because the storm was now intensifying and the visibility lowering we reversed course with our bow now to the West. Both sea and wind were rising. Anticipating our arrival to the port of Havana we put our bow to the SSW. Running in this fashion before the sea we hoped to ease the strain on the ship, but the rudder would not respond and to keep from capsizing we eased out the fore sail sheet and immediately the wind blew it to pieces, emptying the ship of any sails. At 9:30 PM such a wind and sea came upon us that we found ourselves unable to work the ship and still maintain the ship upright and the ship fell off into the sea, unable to right itself. This obliged us to cut away the main mast halyards, after which the mast fell away into the seas.

We stood this way working the ship with the wind still strengthening and with water over the Alcazar deck and with the main hatch under water. In this conflict we desired to cut a; the fallen top main mast and to achieve carrying away the top mast of the mizzen and fore top mast. Upon doing so, at once the sc righted itself for which we were all heartened. Then we cut away the rigging of the masts and a half hour later the foremast fell away but it fell in such a way that it clung to the side of the ship, it being the only one remaining t: relieve our torture and provide salvation. We were unable to cur the stay of the mast.

It soon became necessary that we cut the bowsprit. which required a lot of work. Having done this by 3:10 PM it fell away and we were free of all masts, making us not unlike a buoy, secure in the knowledge that the task before us now was to stay afloat with cur pumps and keep out the water which incessantly came in due to the repeated blows from

the seas. At 5:00 PM the corridor and the privies were filling with water, finding us with more work than we could handle and more when the rudder coat opened up. We stopped this up with clothes, mattresses and odd pieces.

The ship was now opening between decks, further filling the hold with water and we worked feverishly at the pumps trying to bail the water out when at 6:00 PM the wind changed to the South with as much if not more violence than before, the blows of the seas always continuing to add to our torment and we continuously worked at the pumps to keep the ship afloat.

At 8:30 PM the ship struck bottom and continued doing so for a quarter of an hour with horrendous blows, taking co water fast from stem to stern for what seemed surely to pound us to pieces. Thus we suffered through the rest of the night.

July 16th-

At daybreak the weather was clear and we could see the land and with the light of day we could see the coast of the NE-SW which we recognized as the beginning of Key Largo at the entrance to the Canal of the Bahama, about two leagues distant. We also saw a very large ship grounded to the SW about 1 1/2 leagues and we supposed it to be the Capitana. To the NW we saw another ship grounded at about 1/2 league, and we supposed this to be the ship of El Duque (San Joseph y las Animas Likewise to the SSW four or five leagues we discovered two grounded vessels which we thought to be Tres Puentes and the one of Herrera. To the West about four leagues we found another close to land which we supposed to be the one of Chaves.

Because the small boat was badly bartered by the cruel blows of the seas and winds we had to patch it or with what materials we could find. At 7:00 AM we set it into the water and embarked in it an official who could go to land to find the best place for the rest of us to disembark.

The launch suffered a similar fate and we patched it up likewise with matting and cloth since we had no carpenter's tools (they were under water in the hold). With great effort we placed it into the water and embarked in it a Sargent, two chiefs with infantry, and a guardian to defend the people. The officers then ordered a raft built from parts of the ship, since there were no more boats available with which to get the pe: ashore.

July 17th-

In the morning the raft was completed, well made with it's quarter casks, and by 9:00 AM 60 people were embarked in it with one official. At about 5:30 PM we brought aboard our boat and it departed in an hour loaded with nails, caulking, tar, and people to make a launch and boat on shore. At 10:00 PM the ship's launch was hoisted on board.

July 18th-

Another raft was made and filled with people and as before the launch towed it ashore.

We received notice from the ship Murguia that it had grounded without taking on water, minus its main mast and some top masts, and that nearby was a Balandra which left in convoy with us from Havana bound for San Agustin loaded with flour. This balandra was afloat but without a mast. Also, we suppose from the said notice that the El Gran Poder de Dios managed to save itself on an anchor but was also dismasted.

July 19th-

We continue to send people ashore. Notice was received of the San Pedro being grounded and full of water, and the same fortune befell the Navio of Tern.

July 20th-

The launch and boat returned at about noon with orders from the Commander for the Captain and his Officials to go ashore and if able leave the ship in the hands of six men of satisfaction.

We learned that the San Francisco of Ur was grounded along with the Almiranta, and that the Fragata going to Florida was in pieces and that only one man escaped from it.

July 21st-

We went ashore.

We took notice that the San Raphael, the one of Arizon, and the one of Sanchez de Sevilla were all grounded and flooded.

July 22nd-

The Captain commanded the crew that were on board to leave the ship, along with the officers, minus the six before mentioned men, and they all headed for this Real (Camp) where we now all are.

July 23rd-

The underwater salvage (buceo) of the Caoitana commences this day and continues with good results.

July 25th-

Notice arrived of the loss of the San Ignacio of Irquijo from which no more were saved than 14, the 12 being sailors and the other two servants of passengers. All of these ships are cast a in the Keys to the West (of this real on Matacumbe El Viejo), a distance from this Real to the last is 12 leagues.

July 26th-

The Balandras returned from Havana with supplies and ere then loaded with people and salvaged silver for the return voyage.

July 31st-

We learned from the Balandra that was dispatched for water to Cayo Bizcayno how an Aviso is anchored which sailed with us from Vera Cruz, it is dismasted of the main mast and spars and top masts and without a rudder. They didn't find anyone on board but they found a jury mast made. Likewise a piece of the Main mast had been fashioned into the rudder, as though someone had fixed it to try and sail out of there. Some of the ship's supplies were still on board and from aloft they spotted another ship grounded.

August 2nd-

The Captain's small boat arrived to this Real, which had been sent out as an Advise Boat, and in it were supplies. The Balandra also returned with one launch and one boat, these

had gone for water. They encountered the launch of the Aviso on land in a canal. They also found another ship which was El Populo, sunk up to its Poop Deck. They found no one on board and it was determined by the practical navigators to be at the Head of the Martires.

August 4th-

We received notice that all of the silver had been taken off the Almiranta and taken to shore.

August 7th-

The ship of Murguia was oft loaded and is now afloat awaiting the trip to Havana.

The underwater salvage of the Infante started this day and was finished on the 9th, having salvaged 180 boxes of silver coins, lacking just one from concluding the registry.

August 10th-

To date, 1,910 boxes of silver were taken from the Capitana, lacking 30 from the complete registry. The salvage is continuing for the indigo, as it is with all the other ships.

NOTICES OF THE SITES WHERE THE SHIPS OF THE FLOTA GROUND, OVER A DISTANCE OF 20 LEAGUES FROM THE CABEA DE LOS MARTIFES TO THE CABEZA DE LAS VACAS.

Pinque El Populo: Cabeza de los Martires, up to it's poop deck

El Aviso: Off Cayo Biscayno, remaining afloat

San Joseph: Cayo Tavanos & Bocas de Guerrero, flooded to its poop deck

Infante: Cayo Tavanos, its decks flooded

Capitana: Cayo Tavanos, totally flooded

Chaves: Matacumbe El Grande, remaining afloat

Herrera: Matacumbe El Grande, its decks flooded

Tres P Matacumbe El Grande, totally flooded

Balandrita: Matacumbe El Grande, remaining afloat

Murguia Cayuelo de Matanzas, less its cargo

San Pedro Cayuelo de Matanzas, its decks flooded

Terri: Cayo de Viboras, its decks flooded

Poder de Dios: Cayo de Viboras, less its cargo

Almiranta: Cayo de Viboras, its hold flooded

San Francisco: Cayo de Viboras, it's decks flooded

Angustias: Cayo de Viboras, totally flooded

Arizon: Cayo de Viboras, part of its cargo unloaded

Sanchez de Sevilla: Cayo de Viboras, flooded up to its poop deck

Fragata de la Florida: Submerged, one man escaped to this Key on a spar

San Ignacio de Urquijo: In Cayo de Vaca in pieces, having saved from crew and passengers only 12 men

FROM: 5102 - 1733 Flota

JESUS, MARIA, AND JOSEPH— HAVANA 20 AUGUST 1733

Concise notice of the shipwreck and navigation of the Flota under the command of Chief of Squadron Don Rodrigo de Torres, from its commencement at Vera Cruz on 25 May when it started for the return trip to Spain:

On the referred date 25 May the weather was good as the Flota made sail from the port of Vera Cruz, having just gone through an epidemic of the black vomit ;Yellow Fever) which was so bad that many who were to embark in this Flota died. These people are the following;

Don Miguel de la Ranaga, Don Joseph Hoscarrer, the two children of Arizon of tender age, Father Alexandrio Trujillo of the Order of Santo Domingo, Don Andres de Herrera, Monsignor Delfinee Sastre of Mexico, and Don Mathias de Zelaya. Some soldiers, sailors and servants of passen also died.

The following merchants remained in the Port :of Jalapa;

Don Miguel Lazo de la Vega, Don Miguel Francisco de Torres, Don Antonio Hidalgo Agudelo, Don Salvador Dionisio Brabo, Don Antonio Vasquez, Don Juan de la O'Martinez, Don Carlos Joseph de Montes, Don Santiago Adinc, Don Alonso Freire, Don Juan de Salaz, Don Joseph de Guisasala, Don Antonio Soberron, Don Joseph Antonio de Almorza, Don Juan e Castiliejo, Don Joseph Critz de Uriarte, Don Francisco de la Rosa Lebaron, Don Antonio Ramirez, Don Ignacio de Micholena, Don Francisco de la Coteria, Don Juan Mathias Visioso, Don Juan Cordero, Don Domin Lopez Carabajal, Don Pedro Martinez de Oslo, Don Francisco de Castro, Don Christobal de Toledo, Don Mateo Vaso, Don Francisco Gutierrez Franco, Don Antonio de Herrera, Don Antonio Estrirtana, Don Francisco Escajadillo, Don Francisco de Sierra, Don Pedro opez de Echandia, Don Francisco de Morales, Don Manuel Rivera, Don Lasireanc Donado, Don Nicolas Ybanez, Don Juan de Perea, Don Joseph Martinez de Rivas, Don Juan Leonardo Malo, Don Antonio Yniquez, Don Manuel Perez de Galdiamo, Don Joseph Pezero, Don Manuel Sanchez Garcia, Don Andres Francisco Escudero, Don Diego Rodriguez de Pedrcid, Don Alexandro Guitian, and Don Vizente Valero Suarez. (Presumably these merchants were too sick to travel).

By virtue of the bad weather we did not arrive to the Havana until the 24th, 25th, 26th and 27th c June, having been separated by the impulsiveness of the weather and currents. From these referred days until the 13th of July the Flota remained in this port loading tobacco, sugar, hides, and other fruits of the land. On the said 13th of July we observed the effects of the conjunction of the noon which at 11 PM the night before had been with

favorable winds, etc. By 10:00 AM of the cited day all the Flota was outside the Moro Castle, pursuing a course to pick up the head of the Martires for entering the Canal of Bahama.

On the 14th in the afternoon we saw land, and having recognized it as Cayo Hueso (Key West) we realized that the currents were pushing us toward the NW, so we changed course. We also noticed at this time that the sun had a bad appearance.

Following our new course at about 8:00 PM the wind freshened and came out of the North which it maintained until morning on the 15th when it was blowing a hurricane the likes of which we had never seen. The storm swung and the ships, which were now headed South, went to the North and all were dismayed and at God's mercy. Most of the people did not expect to live through it. The ships all grounded from the time of the evening prayer until the morning of the 16th. The distance from the first to the last was 14 to 16 leagues.

The Capitana grounded to the Northeast of Matacumbe, the survivors being its General, Officials, Passengers, Soldiers, and Sailors less one sailor who died at the tiller at the time the ship grounded. The ship grounded with 8 codos of water in the hold and no one expected to survive.

The Almiranta grounded at a great distance from the Capitana, saving all its Officers, Passengers, Soldiers, and Sailors less a child of Ariscum of young age, one Soldier, and two Sailors.

The Infante grounded a short distance from the Capitana, saving all its people.

The Rosario of Murguia grounded at a distance of five leagues from the Capitana with the good fortune of liberating its passengers, supplies, and cargo.

The Navio of Don Antonio de Chaves experienced the same fate as the Rosario at a distance of two leagues from the Capitana, these two ships being of great consolation and relief to the others who were not able to save anything. (May have gotten this ship off)

The Gran Poder de Dios was saved like the before mentioned.

The Navio of El Duque (San Joseph flooded immediately upon grounding and its Officials, Passengers, Soldiers, and Sailors sought shelter on the roundhouse (Poop Deck). All were saved on rafts.

The same happened to the ship of Don Luis de Herrera.

The same happened to the ship San Pedro.

All of the people, part of the cargo, and some of the supplies were saved from the ship of Sanchez Madrid (Angustias)

All of the people were saved from the ship of Terri.

The ship of Don Manuel Sanchez Duran (San Fernando) lost no people, none of the supplies were saved, and only one passenger named Don Mateo Ronquillo, a citizen of Sevilla, perished. (A later letter says they salvaged the supplies and cannon)

From the ship El Sueco (of Arizon) all of the people were saved along with the major part of its supplies and the majority of its cargo was in good condition.

From the San Francisco of Urquijo, only the people were saved.

The Navio San Ignacio of the said Urquijo was found divided into pieces off Cayo de Vacas, where 10 sailors and two servants of passengers were encountered. According to their declarations (where are they?) they appear to have grounded in the reef out front where the bottom remains and only these 12 escaped.

The people who perished were;

Don Christobal de Urquijo and two servants, the Maestre Don Mathias Canuto, Don Simon de Respaldizan with three servants, Don Joseph Alonso de Hoyo and two servants, Don Juan Martin Seavarro and his child (son), Don Diego de Cuellar y Velasco, The Captain Don Diego Raphael Benitez, Donna Manuella wife of the Tailor de Mexico, Don Martin de Sabaiza with two servants, Don Pedro Gonzales Guevara and a cousin, Don Phelipe Calderon, Don Francisco Thomas de Anguis with a servant, Don Gregonio de Mandoza with a servant, Don Juan Baptista de Cosio with his brother, residents of New Spain, and the Archbishop Francisco Diego of the Order of San Agustin of Scalzo.

The following Officials were lost:

First and Second Pilots, Contramaestre Juan Monrero, Quartermaster Joseph de la Torre, Zirufano Don Gregorio Palomino, the Commissary Officer, Steward, Master at Arms Miguel de la Vega, the ship's Surgeon and Barber, and the Chief Gunner.

The ships El Pinque Populo of the King, its Captain Don Juan Eques, and the Aviso of the Consulado (of Cadiz) under the charge of Don Pedro Arrambide were found at the Head of the Martires, grounded with supplies, without boat or launch or people, whose destination or fate no one knows. Some think they went to the Florida (San Agustin) and others think they were able to embark on two English ships (Frigates) which were seen from the Real of Sanchez Duran two days after the storm making efforts to go up the Canal of the Bahamas.

The ship of the King which was built recently in Havana named El Senor San Joseph, alias El Africa, of 60 cannons and carrying tobacco for His Majesty has not been seen.

The Fragata Situado (Supply Ship) going to Florida (San Agustin) opened up in the sea and only one man escaped who arrived to the Real of Sanchez Duran on a plank to give this notice.

One Balandra sailed in convoy with the said Flota. It was dismasted and badly worn, finding shelter between two keys. All of its people were saved along with 256 barrels of flour which aided in keeping the shipwreck survivors alive.

On the 14th of July Don Nicolas Arechavaleta sailed from Havana and the Port of Porto Belo in his Balandra and having been caught in the storm managed to make it back to Matanzas where he stayed until the 18th when the weather cleared. Continuing his voyage, by divine providence, he saw and recognized off the beaches of the Keys up to 12 large ships grounded. Being a merciful man, he returned to Havana to give this notice to the Governor, without being able to get close to any of the grounded ships.

This was done on the 21st, upon which advice the Governor and Royal Officials sent out ships loaded with things to help. They went to the Reales (Camps) of the stricken ships aided by the said Arechavaleta. When the ships arrived at the scene they picked up people

not essential to the salvage work, such as the sick, or women. They also loaded what treasure had been salvaged up to that time.

For the security of the Real of the Capitana the Commander (Torres) ordered the Naval Captain Don Nicolas Alvares de Losada to construct two forts of four cannon each. (The well depressions are on Island Christian school land.) This was done in accordance with good military art and from the front of these they were able to command any route the enemy might choose.

Afterward, the Knight Commander (Torres) ordered the Florida Balandra repaired and a new mast steeped. In it he sent Don Joseph de San Vicente with orders to the Havana. He repeated this act with the launch of the Navio of Don Reimundo de Soto in which was also embarked an Official of Orders. They encountered a Balandra off Cayo Hueso which had been dispatched from the Havana to scout the coasts and they related information to them. Then the said launch returned to the Real transporting the men freed from the ship of Urquijo (San Ignacio).

Don Juan Feliz de Andrade was in Cayo Viboras along with the Navios San Fernando, Las Angustias, and Arizon. He was ignorant of the above dispatches for he didn't know what had happened to the rest of the Flota. He armed a launch and placed Don Juan Clemente Sanchez Duran in it with letters to the Governor of Havana, Royal Officials, and knowledgeable persons of commerce. In these he notified them of what had happened and asked for help and supplies, 200 guns, powder and shot, all of which was necessary to sustain and defend themselves. The launch arrived at the Havana on the 25th and was the first to do so.

Afterward, when Don Juan Feliz de Andrade learned the fate of the Capitana, they went up to its Real where likewise arrived Don Antonio Joseph de Herrera. The Knight Commander outlined his plan to them, which would sustain the people, commence salvage efforts, and maintain security of it. In this manner he attended to the interests of the King and of the commerce, and his spirit desired that all the Deputies proceed in this together with the same resolve.

With the security of this good advice the said Deputies convened in a general council of commerce, within which they agreed on 27 items, derived from the various points which they resolved. The practical essence of them is as follows:

That the first Deputies Don Juan Feliz de Andrade and Don Julian de Monsalve pick up the wealth and other things gathered at the Reales and go with Don Juan Clemente Sanchez Duran to the Havana, conveying the best correspondence to the Governor and Royal Officials of this port that these Deputies are knowledgeable in the general needs of all the reales such as how to best benefit the lives and work on these wrecked ships.

That the 3rd Deputy Don Antonio Joseph de Herrera, accompanied by Don Joseph Diaz de Guitian, shall remain in the Real of the Capitana to receive and inventory the wealth and other things which are carried to it, such as those coming from the Patache, Navio of Duque, Chaves, Tres Puentes, and the one of Herrera. A clear account and relation shall be kept. Additionally, a separate account shall be kept of the things remitted from the launch and boats by one person named for each of the wrecked ships along with general rules for transporting it.

That the 2nd Deputy, Don Pedro de Cordova, shall assist in the Real of the Almiranta along with Don Alonso Balcarcel and Don Francisco de la Razabal for the expressed ends.

That Don Antonio Navarro shall work in off-loading the ship of Murguia and the San Pedro in conformance with the above referred.

That Don Pedro de Iriarte and Don Manuel Gabriel de Cespedies shall assist in the aforementioned form to the off loading of the Navio of Tern and the Gran Poder de Dios.

That in the same manner Don Juan Valentin de Villanueva and Don Geronimo de Ariscum shall assist in the off loading of the navios Nuestra Senora de los Reyes y San Fernando, the Rosaria of Arizon, and the Angustias of Sanchez de Madrid. To these ends likewise shall be made in particular the responsibility for scouting the beaches close to where the ship of Urquijo wrecked and to pick up whatever things the sea happens to bring in.

That because the ships are 16 leagues apart from the first to the last it seems appropriate to arm a boat taken from the work of commerce and put it under the command of Don Gonzalo Blanquito toward this end, by order of the Knight Commander and Deputies, to scout all the navios on a daily basis, taking the report to the Real of the Capitana from each, and relaying any orders from the Real to each ship's crew.

In the above cited council they took into account the large costs of this salvage effort (buceo) and to affect this it was necessary to take from the common treasury sufficient wealth and to enter it into the power of the treasurer named in the said council, having conferred in him the security and experience this confidence requires. This position was conferred on Don Mathias Bustillo y Garcia who, for this purpose, went to the Havana with the three deputies to expedite all of the decisions of the council.

A general expense account of the salvage effort is carried for this purpose, agreed upon by the named deputies and commerce, and to insure its integrity Don Joseph Diaz Guitian is named to preside over it. For this end he is to attend all money drafts, taking relation of the original instruments given unto his power, inspecting the motivation of each one, and signing for the deputies to pay for the imports of the aforementioned Don Mathias Bustillo to whom is entered the support of the letters of payment for the wealth which is entered into his power. Toward this express end, he shall leave open for satisfaction his accounts with the presentation of Libranzas money drafts) with the receipt of the well known parties that this decision was agreed upon for the deputies destined for the Havana.

To thwart the attempts of would be pirates on the grounded navios, the Balandra of Arechavaleta is armed and placed under the command of Lieutenant of Fragata Don Martin de Funes, which is to be maintained in sight of the Capitana and Patache all during the expedition.

Likewise the Brigantine El Juan was armed with 10 cannons and 80 men under the command of the Official of Orders Don Joseph de San Vicente to convoy the silver from the Reales to the Havana, without which, up to today, anything of significance is happening.

The treasurers of the Capitana, Almiranta and Patache are all busy salvaging and sending the goods to the Havana. So far 1,100 boxes have been taken from the Capitana, 1,525 from the Almiranta, and 180 from the Patache. It is expected that from the others a total of 1,381 boxes will be salvaged. (This equals 4,186 boxes of silver coins at 3000 pesos to the box and that's a lot of coins, i.e. 12,558,000).

Likewise some bags of Cochineal were sent to this city (Havana). These were damaged by water which the deputation has providently dried by the grace of the House of San Isidrio, and those who know say this will not hurt the value.

This is what has happened up to today the 14th of August 1733. If there is any delay in this notice and/or anything new happens or more silver is carried in, it will be added as a postScript.

Today there arrived from the Real of Murguia (Indian Key) the notice that the Navio El Rosario is floating free in 5 brazas of water and not leaking. It is jury rigged to enable guiding it to the Havana where by the Grace of God it soon will be

Dated 19 August 1733

Note: Though there is no signature and considering this is one of many copies made during the period it was probably drawn up by the Escribano Real of Don Rodrigo de Torres, Knight Commander of the Buco. The author remains a mystery, but it may have been the 1st Deputy. It was probably written, in Havana and could even have come from the Governor to the President of the Casa de Contratacion or Consulado de Cadiz.

INDIFERENTE GENERAL 2021— 1733 Flota

Armed ships which comprise the Flota for the present year (1732 which will make the voyage to New Spain under the command of Chief of Squadron Don Rodrigo de Torres Y Morales, their names and the names of their Lordships and Owners follow:

FOR HIS MAJESTY

EL RUBI- Capitana- Its Maestre de Plata and Permission and Treasurer of the Squadron Don Balthesar de la Torre.

EL GALLO INDIANO- Almiranta- Its Maestre de Plata and Permission Don Bernadino de Maturana.

EL INFANTE- Refuerzo- Its Maestre of Permission Don Domingo de Lanz.

EL PINQUE NAMED EL POPULO- Its Maestre de Raciones and of the Property of the Royal Hacienda Don Francisco Ymbernon.

FOR PARTICULARES

SAN PHELIPE- Of the Marques de Canada, its Maestre Don Joseph del Villar y Andrade

NUESTRA SENORA DE LOS DOLORES Y SANTA ISABEL- Owner Don Nicolas del Castillo, its Maestre Don Antonio Loaysa

SAN JOSEPH Y LAS ANIMAS- Owner Don Joseph del Duque, its Maestre Don Christobal Fernandez Franco

NUESTRA SENORA DE LAS ANGUSTIAS Y SAN RAPHAEL- Owner Don Joseph Sanchez de Madrid, its Maestre Don Francisco Sanchez de Madrid.

SAN FRANCISCO- Owner Don Christoba de Urquijo, its Maestre the same.

SAN YGNACIO- Its Owner and Maestre the said Don Christobal de Urquijo

NUESTRA SENORA DEL CARMEN Y SAN ANTONIO DE PADUA- Its Owner and Maestre Don Antonio de Chaves.

NUESTRA SENORA DE BELEN Y SAN ANTONIO DE PADUA- Its Owner and Maestre Don Luis de Herrera.

EL GRAN PODER DE DIOS- Its Owner and Maestre Don Francisco Sanchez de Madrid

NUESTRA SENORA DEL ROSARIO, SAN ANTONIO, AND SAN VICENTE FERRER- Its Owner Don Jacinto de Arizon, its Maestre Don Juan de Arizon

SAN PEDRO- Its Owner Don Gaspar de Larrea Berdugo, its Maestre Don Gaspar Lopez de Gonzales

NUESTRA SENORA DE BELEN Y SAN JUAN BAPTISTA- its Owner Don Francisco Lebrun de Chacon, its Maestre Don Diego de Lacorte

NUESTRA SENORA DE LOS REYES Y SAN FRANCISCO- Its Owner Don Francisco de Soto y Posada, its Maestre Don Joseph Cabeza

NUESTRA SENORA DEL ROSARIO Y SANTO DOMINGO- Its Owners the heirs of Don Andres de Murguia, its Maestre Don Thomas de Apodaca

NUESTRA SENORA DEL ROSARIO, SAN FRANCISCO XAVIER Y LAS ANIMAS- Its Owner and Maestre Don Luis Lozano

NUESTRA SENORA DEL PILAR, ALIAS EL LANFRANCO- Property of His Majesty going under account of the Consulado and Commerce, its Captain Don Juan Francisco Liano and Maestre Don Francisco Fanales.

To administer this Flota and accompanying it is the Royal Commissioner of the Navy Don Alonso Barragan.

In convoy with this Flota is the Registry of Santa Marta of Don Jacinto de Arizon and another for Maracaybo under the contract of Don Juan Chaurio.

This Flota sailed from Cadiz on 2 August 1732 and by 3 PM they were out of sight of this Plaza.

This letter dated Cadiz 4 August 1732

British Museum:

Note: ADD MSS 13,974.66, Folio 465- Mapas y Planos la mayor parte marinas de America y sus Islas, que Don Antonio Piso de Ardanaz Compro en Oct 1761 en la almedena de la difuncta Marquesa de Matallana (Viuda del Tieniente General de la Real Armada Don Rodrigo de Torres). This is just a tantalizing list of what he bought. .wish I had them all. Where are they??? Possibly in Don Antonio's personal family archive in Madrid where Wellington may have missed them, capturing only this list. Who knows?

British Museum MSS Room (Student's Reading Room)

Add 13,974, Folio 466 (in Spanish); Maps and plans of the Seas of America and their islands that Don Anton Pison de Ardanaz bought in October of 1761 from the stored effects of the deceased Marquesa be Matallana, widow of Lieutenant General of the Royal Armada Don Rodrigo de Torres (y Morales). From Folio 471, bottom of the page- "The keys of Florida showing the places where in the year 1733 the ships of the Flota of New Spain wrecked, with the title- 'A Description of the Ships' by Miguel Hurdel de Montellon. Printed on paper of more than 2 varas long by about 3 palmos wide.

Another map of only the keys, delineated and drawn up by the Pilot Juan de Liguera Antayo in 1742, in one plat of "Marca Mr".

Another map displaying information (knowledge) concerning these keys on 2 plots of "Marca Manera".

The fourth map is of the Keys in the Little Tortugas which is located in the West of Los Martires showing the works made by the English wherein they had fortified it (Garden Key). This is entitled "Plan of One of the Keys of the Little Tortugas" in 1/2 plat of regular paper.

Another map delineating the works and fort with which the defense was established. On 1/2 plat, regular paper.

Accompanying these plots is a relation of the e which was made (by Don Rodrigo de Torres) in 1742 against the English which inhabited the said Key (Garden Key); who: then abandoned it after the arrival of the Spanish Squadron, Folio 47: end.

British Museum, MSS Room, Add 31,357 nnn - Map of the Florida Keys and Reefs showing the positions of the 1733 Flota. Transferred from the Department of Printed Books in April of 1881; British Museum stamp 22 Nov 1877, number written in pencil 80490/1776, 379p. This same package of maps includes the Champlain Battle Map of 1776 and a Bermuda Wreck Map (F & nn) 1840 (See Misc., Items).

From ADD 11950, check the 1733 Plate Flota locations and copy.

PAGE 4:

Portugal Street PRO (OLD LOCATION); Calendar of State Papers, Colonial-Many letters concerning the 1733 wrecks, see-CC3/362, Folio 201, 203-205v, 208v; C023/3, Folios 113-114v, 133v, & Abstract, 112, & 112v. Potential sources C05/4 (1711-39) Misc. Dispatches; C0323/9 (1729-33 ; C023/14 (1728-46 Bahamas); and ADM- 1/5272 (1721-35)

On 2 July 1976 I ordered from the BM MSS Section, ADD 11,95: which was Bob Marx's reference to the 1733 plate fleet. This contains Sallust in Latin but no fleet information.

Ordered EG* 1793, #15, Folio 160 which is about the wreck of a Balandra named Na Sa de la Popa in 1752. No real definitive information.

PRO Portugal Street (West Room) (Now at Kew Gardens PRO) COS/362 - Storm on the 4th of July (Gregorian Calendar) struck the 1733 Flota off the Florida Keys, Xeroxed 6 pages of description.

C05/582, Folios 6-9, 10-11- Same as CO5/362, a lot of stuff on Florida around the dates 1763-7.

AGI Sevilla:

IG 2724, From WWNB #14, Page 33v, on 6 Feb 1982:

Lots of info about the Ferra de Jalapa (Near Vera Cruz) and the 1733 Flota, including claims from the merchants who had goods on the lost ships. Percentages were charged, etc. A lot of details concerning the Ferias at JaThpa.

NOTES ON SEARCH: IG 2736-Navios de Azogues wre:ked in Santo Domingo 1725-29; Escribania 1123, 1733 information on San Francisco de Urquijo; Contratacion 2923, 1733 information on Capitan Huboni and El Africa; Contratacion 1336/7, 1733 Rodrigo de Torres IDA Registry 1732; Santo Domingo 869, Registry 1605 - 1 Escribania 1026, Oficio de Cosnografico, 28th letter.

Biblioteca Nacional-Madrid

Seccion Geografica y Mapas (4th floor of Biblioteca)

Two maps of particular interest are drawn by Miguel Hurdel de Nontellon and they show the places where the ships of the 1733 flota were lost. In the one map (MI-196) he calls the Angustias, No. 16, San Raphael. In the other (MI-200) he calls it Angustias. In MI-196 he spells No. 12 Tirry and on the other Terri (Marques de Canada). At the bottom of both lists of ships names/places he says

“La Fragata que iva para La Florida se sumergio al SE del No. 18 como 6 millas’ or “La Fragata de la Florida esta sumergida cosa de 6 millas al SE del No. 18 (San Fernando).

See the Photocopy of these maps in my general Map collection folder.

Tag #	Composition	Description	Comments	Qt	Site name
8029	bone	bone		2	1733
8030	bone	bone		4	1733
8029	glass	shard	olive green	1	1733
8011	glass	ornamental	clear	1	Capitana
8012	glass	shard	green	1	Capitana
8013	glass	shard	clear plate	1	Capitana
8014	glass	shard	brown bottle	1	Capitana
8015	lead	musket ball		1	Capitana
8026	lithic	ballast		1	Capitana
8016	porcelian	sherd		2	Capitana
8017	porcelian	sherd		1	Capitana
8028	porcelian	sherd		1	Capitana
1623	porcelian	sherd		2	Infante
1406.6.1	porcelian	sherd	A 1406-6b	5	San Jose
1211	pottery	sherd		1	1733
1307	pottery	sherd		1	1733
1642	pottery	bowl		1	1733
1643	pottery	base	restored	1	1733
1824	pottery	sherd		1	1733
1825	pottery	sherd		1	1733
1827	pottery	sherd		1	1733
8005	pottery	base	restored olive jar base	1	1733
8006	pottery	base		1	1733
8007	pottery	sherd	broken test piece	2	1733
8008	pottery	sherd	glazed	1	1733
8009	pottery	sherd	glazed	1	1733
8010	pottery	sherd		1	1733
8018	pottery	Majolica	2X2 reconstruction	6	1733
8019	pottery	sherd	stoneware	1	1733
8020	pottery	sherd	stoneware	1	1733
8021	pottery	Rey Ware		1	1733
8022	pottery	sherd		1	1733
8023	pottery	sherd	glazed	1	1733
8024	pottery	sherd		5	1733
8027	pottery	brick		2	1733
1606.11.1	pottery	sherd	D	1	1733
1022	pottery	sherd		1	Chaves
1023	pottery	base		1	Chaves
1404.19	pottery	sherd	Majolica	3	San Jose
1404.25	pottery	sherd		1	San Jose
1404.28	pottery	sherd		1	San Jose
1404.37	pottery	sherd		2	San Jose
1406.11.2	pottery	sherd	B	1	San Jose
1406.11.3	pottery	Majolica	C 1406-11c	1	San Jose
1406.6.2	pottery	Majolica	B 1406-6b	6	San Jose

Type name	common designation	color Munsell #	Munsell color name	temper	Mohs' hardness	thickness mm	glaze color name	common Munsell #	Munsell color name	possible forms	date range	possible match	variety
A	white to lt grey	7.5YR/7-8/1-3 to 10TY/7-8/1-3	lt gray to pinkish gray to very pale brown	fine	2-2.5	5-10	white yellow gray brown	10GY/3/2 10GY/5/2 N/2.6-6	dusky yellow green, grayish green, black to gray	bowl/bacín/jar	1733	Capitana Gray	
B	orange/red	5YR/6-7/4-6	lt reddish brown to pink to reddish yellow	fine	2-2.5	5-10	black	N2.5	black	bacín/jar	1733	1733 Black	
C1	tan or buff	5YR/5-6/5-6	yellowish red to reddish yellow	fine	3-4.5	7-12	possible yellowish green	5GY/7/4	moderate yellow green	bacín/jar	1733	Higgs Green	
C2	orange/red	5YR/5-7/4	reddish brown to pink	fine	3-4.5	5	none			bowl	1733		
C3	sand tan	10YR/7/4	very pale brown	fine	3-4.5	5-12	none			bowl	1733		
C4	orange	2.5YR/6/6	light red	fine	3-4.5	4-6	dark olive green	5Y/3/2	dark olive gray	unknown	1733	Rey Ware	
C5	reddish tan	5YR/6-7/3-6	lt reddish brown to pink to reddish yellow	fine	3-4.5	5-10	possible	undetermined	undetermined	bowl	1733		
C6	rust	10R/4-6/4	weak red to pale red	fine	<6	4-10	black	10GY/2.5/1	greenish black	unknown	1733		
C7	orange	7.5/6-7/4-6	light brown to pink to reddish yellow	fine	3-4.5	3-5	orange yellow green	7.5YR/6/6 7.5YR/4/6 2.5Y/3/2 2.5Y/5/4	reddish yellow, strong brown, very dark grayish brown, light olive brown	plate	1733	El Morro Ware	orange
C8	brick red	5YR/6/8	reddish yellow	fine	3-4.5	5-7	greenish brown	10YR/4/6 2.5Y/6/4 7.5YR/5/8	dark yellowish brown	unknown	1733	El Morro Ware	red
C9	dark tan	7.5YR/4/1	dark gray	fine	3-4.5	4	yellow/brown brown		lt yellowish brown strong brown	unknown	1733	El Morro Ware	gray
D	tan or buff	5YR/6-7/4	lt reddish brown to pink	medium	3-4.5	10-15	none			storage jar	1733	Olive Jar	classic
D glazed	tan or buff	5YR/6-7/4	lt reddish brown to pink	medium	3-4.5	10-15	olive green	5Gy/3-6/2-4	grayish olive green to moderate yellow green	storage jar	1733	Olive Jar	classic glazed under fired
E	gray	N5	medium gray	medium	3-4.5	8-12	none			storage jar	1733	Olive Jar	
F	orange to red	5YR/5-6/6-8	yellowish red to reddish yellow	medium	3-4.5	12-18	none			storage jar	1733	Olive Jar	red
F glazed	orange to red	5YR/5-6/6-8	yellowish red to reddish yellow	medium	3-4.5	12-18	brown olive green	5YR/4/4 5GY/4/4	moderate brown dark olive green	storage jar	1733	Olive Jar	red glazed
G	tan	5YR/5-6/6	yellowish red to reddish yellow	coarse	3-4.5	20-30	none			utilitarian storage jar	1733	Spanish Tinaja	
I	gray to black	N2-4	grayish black to medium dark gray	medium	3-4.5	8-12	red	10R/4-5/3-4	weak red	unknown	1733		
J	tan or buff	5YR/6-7/4	lt reddish brown to pink	medium	3-4.5	10-15	none			bacín/jar	1733	Spanish Storage Jar	San Jose only

Type name	common color designation	Munsell #	Munsell color name	temper	Mohs' hardness	thickness mm	glaze color name	common Munsell #	Munsell color name	possible forms	date range	possible match	variety
El Morro Ware	tan to reddish buff	7.5YR/6-7/4-8 4/1	pink, light brown, reddish yellow, dark gray	fine	3-4.5	2-7	orange, olive green, brown, light green, rust	2.5Y/4/3 5YR/6/6-8 7.5YR/6/8 10YR/6/8	reddish brown, reddish yellow, brownish yellow	bowl/bacín/plate	1550-1770	C-7, C-8, C-9	
Greyware	dk gray	10YR/5-6/3	pale brown to brown	fine	3-4.5	4-7	none			hidrocerao	1780-1820		
Redware	white to orange/brickred			fine to medium			none			bacín/jar	16th-17th		
Rey Ware	tan/buff/orange	2.5YR/6/6	light red	fine	3-4.5	4	brown, rust, orange-red, light orange	5Y/3/2	dark olive gray	bowl/plate/pitcher	18th-19th	C-4	
Spanish Storage Jar	tan/buff			medium			none			bacín/jar	16th-18th	Redefined and expanded	
Black Lead-Glazed	cream to terracotta	10YR/8/2	very pale brown	fine	2-2.5	8-10	black	N3	dark gray	bowl/plate/pitcher	1725-1770		

Tag #	Shipwreck	OD mm	ID mm	width mm	height mm	style	body mm	%	photo	Type
388	Capitana	90	55	20	26	e	8	15	y	D
6.02.91.02	San Jose	*	*	21	21	a	8	15	y	D
1603	Capitana	100	55	22	20	b	*	100	y	D
5.16.98.B3	San Jose	100	64	18	23	b	*	25	n	D
8.10.96.10	San Jose	*	*	20	25	e	*	20	n	D
U12	San Jose	*	*	17	30	e	8	20	y	D
U17	San Jose	88	60	14	27	f	*	50	y	D
293	San Jose	90	60	15	26	f	5	100	y	D
3.29.02.54	San Jose	125	80	18	29	f	9	40	y	D
5.03.96.01	San Jose	132	90	21	15	f	12	20	n	D
6.08.96.06	San Jose	*	*	18	29	f	*	20	n	D
7.09.91.01	San Jose	135	95	20	30	e	16	40	y	F
8.10.96.12	San Jose	660	600	30	35	*	30	>5	n	G
6.11.99.01	San Jose	146	60	13	18	*	*	25	y	J
6.16.99.02	San Jose	*	*	15	20	*	5	15	y	J

Date	Hole #	Tag #	Variety	Form	gilding	Notes	Diameter	Photo
4/27/1995	1995046	69	blue	U				N
5/7/1995	1995073	91	B & W	U				N
7/15/1995	1995105	139	blue	U				N
7/16/1995	1995109	161	blue	U				N
7/16/1995	1995109	161	blue	U				N
7/17/1995	1995116	185	blue	cup		base	42 mm	N
7/17/1995	1995116	185	B & W	cup		rim scalloped		Y
7/17/1995	1995116	185	B & W	U	Y			N
7/17/1995	1995116	186	white	bowl		base	62 mm	Y
7/17/1995	1995116	187	white	U		partially glazed		Y
8/12/1995	1995120	233	blue	cup	Y	rim		N
8/12/1995	1995120	234	blue	U	Y			N
8/12/1995	1995120	235	blue	U				N
8/12/1995	1995120	235	blue	U				N
5/28/2000	2000028	310	white	U				N
5/28/2000	2000030	316	blue	cup		base	42 mm	Y
5/30/2000	2000035	345	B & W	U				N
5/31/2000	2000035	362	B & W	cup	Y	rim		Y
6/2/2000	2000042	383	B & W	U				Y
7/11/2000	2000124	483	B & W	cup		rim Japanese?		Y
7/12/2000	2000066	1513	blue	U				N
7/12/2000	2000067	1515	B & W	cup				N
7/13/2000	2000070	1538	blue	cup	Y	rim		N
7/14/2000	2000072	1546	B & W	cup				N
8/10/2001	2001009	1576	blue	cup	Y	rim		N
	Infante	1623	B & W	cup		base	42 mm	Y
	Infante	1623	B & W	cup	Y	rim		Y
	Capitana	8016	B & W	cup		base	42 mm	Y
	Capitana	8016	blue	bowl	Y	base	80 mm	N
	Capitana	8017	B & W	U	Y			Y
	Capitana	8028	B & W	cup	Y			N
	San Jose	1406.6.1	B & W	case bottle	Y			Y
	San Jose	1406.6.1	white	cup	Y	rim		Y
	San Jose	1406.6.1	B & W	cup	Y	rim		Y
	San Jose	1406.6.1	B & W	cup	Y			Y
	San Jose	1406.6.1	B & W	cup	Y			Y

TAG #	Qt. RED	RED Identifiable	RED fragment	Qt. GRAY	GRAY identifiable	GRAY fragment
52	0	0	0	3	3	0
53	1	1	0	0	0	0
112	0	0	0	1	0	1
141	4	3	1	11	10	1
180	2	2	0	0	0	0
195	6	4	2	2	2	0
203	0	0	0	2	2	0
315	1	0	1	0	0	0
322	1	1	0	0	0	0
330	0	0	0	1	1	0
348	0	0	0	1	1	0
369	2	2	0	1	0	1
370	1	1	0	0	0	0
410	2	2	0	1	1	0
493	1	1	0	2	2	0
1565						
1581	0	0	0	3	1	2
1908						
8007	0	0	0	1	1	0
8027	2	2	0	0	0	0
totals	23	19	4	29	24	5
TOTAL PIECES		52				

TAG #	Blue/Green	Blue/Green Disitigrated	Olive Green	Olive Green disitigrated	Clear	Lead Flat	Modern
56			1				
65	1		3				
86			1				
105			1				
134	1						
140			1				
143				1			
172	1						
188				5			
238	3						
239			2				
304			1				
317	1		1				
325	3						
361					1		
367			1				
382	3		2				
388			1				
389	5		1				2
1506				1			
1517	2			2			
1536	3	1	2		1		1
1540				1			
1556				4			
1572			1				
8011					1		
8012	19						
8013						8	
8014				19			
8029	1		3	4			
totals	43	1	22	37	3	8	3
Blue/green Total		44					
Olive green total		59					
Total period pieces		114					

Tag #	Qt.	Description
131	1	<i>Sus scrofa</i> -juvenile pig - left ulna
162	1	<i>Gallus gallus</i> - chicken distal tibia
162	1	UID fish vertebra
200	1	<i>Sus Scrofa</i> - pig dorsal vertebra epiphysis
214	1	UID mammal bone fragment
214	1	<i>Sus scrofa</i> - juvenile pig -fibula
225	5	UID mammal bone shaft fragment
225	1	UID mammal femur epiphysis - <i>Artiodactylae</i> (goat, sheep, deer, etc.)
225	1	UID fish vertebra
225	1	NON BONE - holdfast for octocoral, calcium carbonate
313	1	<i>Tursitops truncatus</i> - Atlantic bottlenose dolphin - tooth
343	2	UID large mammal bone fragments
343	1	UID fish vertebra
343	1	UID fish spine
359	4	UID mammal bone fragments
366	1	UID mammal femur epiphysis
381	3	UID fish vertebrae
381	1	UID fish vertebrae
381	1	<i>Felis concolor</i> - cougar -1st phalanx, with cut marks
381	1	UID turtle bone fragment
381	1	UID shark vertebra
392	1	<i>Felis concolor</i> - cougar- 3rd phalanx (claw)
392	1	<i>Sus scrofa</i> - pig - vertebra fragment
392	2	UID mammal bone fragments
1502	1	UID mammal bone fragment with butcher marks
1510	1	<i>Gallus gallus</i> - chicken -synsacrum
1510	1	UID mammal bone
1518	1	UID mammal bone fragment
1524	1	UID Large mammal rib fragment
1524	1	UID mammal bone fragment
1541	1	<i>Gallus gallus</i> - chicken right distal femur
1541	1	UID mammal bone fragment
1547	1	UID large mammal rib fragment
1557	1	UID mammal bone fragment with butcher mark
8029	1	<i>Sus scrofa</i> - pig - 2nd phalanx
8029	1	<i>Bos taurus</i> - cow- vertebra fragment
8030	1	UID fish vertebra
8030	1	UID fish spine
8030	1	UID mammal bone fragment
Total	49	

Ballast Data Key**Sampling Technique Used:**

C- cluster
S- stratigraphic
O- opportunistic

Shape:

R- round
S- sub-round
O- oval
A- angular
X-sub-angular

Secondary Descriptors:

F- fractured
T- flat
S- square
R- rectangular
W- wedge
s- sub prefix

Size:

G- golf ball
H- hard ball
S- soft ball
V- volley ball
B- basket ball
M- medicine ball

Texture:

I- igneous
M- metamorphic
S- sedimentary
O- ore or mineral

Grain size:

F- fine
M- medium
C- coarse

Color:

L- light
M- medium
D- dark

Other Attributes:

F- foliated
U- unfoliated
S- schisted

Misc:

NA- not applicable
or determined
?- not recognizable
LAD- long axis diameter
Type: geologic name

Ref #	Tag #	sampling technique	shape	secondary descriptor	size	texture	grain size	color	other	mass grams	density g/mL	LAD cm	type
8		C	X		V	I	F	D		4334	2.48	20.5	basalt
41		C	S	sW	S	I	F	D		956	2.4	13.5	basalt
52		C	O	T	S	I	F	D		1012		15.5	basalt
77		C	R		G	I	F	D		196		6.5	basalt
85		C	O		G	I	F	D		140		6.5	basalt
104		C	X	W	S	I	F	D		888		12.0	basalt
124	1565	O	O		G	I	F	D		14		3.0	basalt
1		C	X		M	I	F	M		22226		36.0	
2		C	X		B	I	F	M		7711		25.5	
4		C	S		V	I	F	M		4740		19.5	
5		C	X		B	I	F	M		8165		25.5	
6		C	X	F	V	I	F	M		4752		22.5	
7		C	O		V	I	F	M		6804		26.0	
9		C	S		V	I	F	M		6804		22.5	
10		C	X		V	I	F	M		10886		21.5	
11		C	O		B	I	F	M		3400		25.5	
12		C	O		V	I	F	M		4244		23.5	
13		C	S		S	I	F	M		1502		17.0	
14		C	X		S	I	F	M		1178		10.5	
15		C	X	R	S	I	F	M		2000		18.0	
16		C	S		S	I	F	M		1388		12.0	
17		C	S		S	I	F	M		1188		12.5	
18		C	S		S	I	F	M		1416		12.5	
19		C	S		S	I	F	M		2192		15.5	
20		C	O		S	I	F	M		1838	2.66	16.0	
21		C	O		V	I	F	M		4080		22.0	
22		C	O		S	I	F	M		2218		16.5	
23		C	S		S	I	F	M		2128		13.5	
24		C	S		S	I	F	M		1788		13.5	
25		C	X	F	V	I	F	M		2970		17.0	
26		C	R		S	I	F	M		2222		14.5	
27		C	S	T	V	I	F	M		2446		19.0	
28		C	S	F	S	I	F	M		892		16.0	
29		C	S	F	S	I	F	M		1000		15.0	
30		C	S	T	S	I	F	M		890		14.0	
32		C	S		S	I	F	M		1352		13.0	
33		C	X		S	I	F	M		1084		13.5	
34		C	X		S	I	F	M		1614		14.5	
35		C	O		V	I	F	M		3128		19.5	
36		C	S		S	I	F	M		1678		15.5	
37		C	S	T	S	I	F	M		986		14.5	
38		C	O		V	I	F	M		2824		20.5	
39		C	X		V	I	F	M		2906		16.5	
42		C	S		S	I	F	M		2534		15.0	
43		C	S		S	I	F	M		1668		15.5	
44		C	R	T	S	I	F	M		1206		11.5	
45		C	R	T	S	I	F	M		924		12.5	
46		C	S	sW	S	I	F	M		672	2.68	12.5	
47		C	A	R	S	I	F	M		1128		12.5	
48		C	S	sW	S	I	F	M		986		15.0	
49		C	S	sW	S	I	F	M		1080		13.0	

Ref #	Tag #	sampling technique	shape	secondary descriptor	size	texture	grain size	color	other	mass grams	density g/mL	LAD cm	type
51		C	S		S	I	F	M		1998		14.5	
53		C	O		S	I	F	M		1742		17.0	
54		C	S		S	I	F	M		1962		13.0	
55		C	S		S	I	F	M		2608		15.5	
56		C	O		V	I	F	M		2766		18.5	
57		C	O		S	I	F	M		1096		12.5	
58		C	X	R	S	I	F	M		806		12.5	
59		C	X	R	S	I	F	M		656		13.0	
60		C	S		S	I	F	M		1168		13.5	
61		C	S	T	S	I	F	M		1442		15.5	
62		C	O		S	I	F	M		936		13.5	
63		C	O		S	I	F	M		1228		14.0	
64		C	O	F	S	I	F	M		1118		14.0	
65		C	S		S	I	F	M		1220		12.0	
66		C	S		S	I	F	M		1020		12.0	
67		C	R	T	S	I	F	M		856		10.5	
68		C	O		S	I	F	M		956		12.5	
69		C	X	W	H	I	F	M		732		12.0	
70		C	X		H	I	F	M		412		9.5	
71		C	S	sW	H	I	F	M		386		8.5	
72		C	S	F	V	I	F	M		3308		18.0	
75		C	X		H	I	F	M		278		9.5	
76		C	S	F	H	I	F	M		306		9.0	
78		C	X	sW	H	I	F	M		320		9.5	
79		C	X		G	I	F	M		242		8.0	
82		C	O		H	I	F	M		436		13.0	
83		C	S	T	H	I	F	M		384		9.5	
84		C	O		G	I	F	M		210		7.5	
86		C	A	R	H	I	F	M		320		10.0	
87		C	S		G	I	F	M		113		5.5	
88		C	S	sW	G	I	F	M		98		9.5	
89		C	S		G	I	F	M		256		7.0	
91		C	R		G	I	F	M		150		5.5	
92		C	O	T	G	I	F	M		91		7.5	
93		C	O		G	I	F	M		176		6.5	
95		C	X	R	H	I	F	M		352		12.5	
96		C	S		H	I	F	M		246		7.5	
97		C	S	T	G	I	F	M		66		5.0	
98		C	S	T	G	I	F	M		66		5.5	
99		C	S	sW	H	I	F	M		292		10.0	
101		C	S		S	I	F	M		NA		10.5	
102		C	S		S	I	F	M		862		12.0	
103		C	S		H	I	F	M		424		10.5	
105		C	R	F	H	I	F	M		466		9.5	
106		C	S	T	H	I	F	M		179		9.5	
107		C	S	F	G	I	F	M		44		6.0	
108		C	S	F	G	I	F	M		34		6.5	
109		C	S	F	G	I	F	M		45		6.0	
110		C	A	R	G	I	F	M		65		5.5	
111		C	X	F	G	I	F	M		44		7.5	
112	8026	O	A	S/T	B	I	F	M		3092		23.0	basalt?

Ref #	Tag #	sampling technique	shape	secondary descriptor	size	texture	grain size	color	other	mass grams	density g/mL	LAD cm	type
116	331	O	X		G	I	F	M		44		3.5	
118	347	O	X	R	H	I	F	M		236		9.5	
119	347	O	O		G	I	F	M		11		4.0	
120	347	O	S		G	I	F	M		10		3.0	
121	347	O	X		G	I	F	M		6		3.5	
122	347	O	S		G	I	F	M		7		3.0	
123	1699	O	S		S	I	F	M		NA		11.0	
127	1617	O	S	sW	G	I	F	M		49		6.5	
130	1617	O	O	T	G	I	F	M		10		3.0	
132	368	O	X	sW	G	I	F	M		17		4.5	
135	306	O	S		G	I	F	M		4		2.5	
140	357	O	S		G	I	F	M		19		4.5	
142	357	O	S	T	G	I	F	M		11		4.0	
143	1580	O	R		S	I	F	M		NA		12.5	
144	354	O	O		S	I	F	M		NA		17.5	
31		C	S		S	I	M	L		1410		12.5	quartz porphyry
115	331	O	X		G	I	M	L		26	2.65	5.0	white microgranite
40		C	S	T	S	I	M	M		1102		13.0	pink granodiorite
113	331	O	X		S	M	F	D		694	2.75	10.5	pink microgranite
74		C	X		H	M	F	L		906		9.5	quartzite
80		C	A	R	S	M	F	L		414		13.0	metaquartzite
94		C	O		H	M	F	L		308		8.5	quartzite
139	357	O	A		G	M	F	L		14	2.26	2.5	quartzite
3		C	S		V	M	F	M	F	4992	2.65	19.5	
50		C	O		B	M	M	M		3888		22.5	
81		C	X		G	O	F	M		54		9.0	hematite
128	1617	O	X		G	S	C	L		31		4.5	conglomerate
133	368	O	X		G	S	C	M		11		3.5	conglomerate
114	331	O	S		G	S	F	L		30		3.5	sandstone
125	312	O	A	R	G	S	F	L		16		3.0	sandstone
126	312	O	S		G	S	F	L		4		2.5	sandstone
131	368	O	X	T	G	S	F	L		11		3.5	chert
137	306	O	S		G	S	F	L		18		3.0	sandstone
138	357	O	A	sW	G	S	F	L		22		4.0	chert
73		C	X		S	S	F	M		568	2.26	13.0	chert
90		C	X		G	S	F	M		50		5.5	chert

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
1	08/20/94	1994001	24.92472	-80.51480	8	5	sand	lead		musket ball	
2	08/20/94	1994002	24.92472	-80.51482	8	1	sand	pottery		Majolica	
3	08/20/94	1994003	24.92470	-80.51483	8	16	sand	lead		sheathing	
4	08/20/94	1994003	24.92470	-80.51483	8	4	ballast timber	wood		plank	
5	09/01/94	1994004	24.92472	-80.51480	8	1	sand	iron		nail	
6	09/01/94	1994005	24.92472	-80.51480	8	1	sand	pottery		sherd	
7	09/01/94	1994006	24.92472	-80.51482	8	1	sand	pottery		sherd	
8	09/01/94	1994007	24.92472	-80.51482	8	1	sand	copper alloy		unknown	
9	09/01/94	1994007	24.92472	-80.51482	8	1	sand	lead		unknown	
10	09/01/94	1994009	24.92470	-80.51485	8	1	sand	copper alloy		button	
11	09/02/94	1994010	24.92473	-80.51480	8	1	ballast timber	wood		plank	
12	09/02/94	1994011	24.92473	-80.51480	8	1	sand	iron		nail	
13	09/02/94	1994011	24.92473	-80.51480	8	1	sand	iron		nail	
14	09/02/94	1994012	24.92472	-80.51482	8	1	sand	iron		cannon bal	
15	09/02/94	1994012	24.92472	-80.51482	8	1	sand	iron		nail	
16	09/02/94	1994013	24.92472	-80.51483	8	1	timber	iron		nail	
17	09/02/94	1994014	24.92472	-80.51483	8	1	timber	iron		EO	
18	09/02/94	1994015	24.92472	-80.51483	8	1	timber	iron		EO	
19	09/02/94	1994015	24.92472	-80.51483	8	1	timber	wood		plank	
20	09/04/94	1994018	24.92472	-80.51470	8	1	timber	iron		EO	
21	09/04/94	1994021	24.92472	-80.51475	8	1	timber	iron		EO	
22	09/04/94	1994022	24.92472	-80.51475	8	1	timber	iron		nail	
23	09/04/94	1994023	24.92472	-80.51477	8	1	timber	iron		cannon bal	
24	10/15/94	1994026	24.92473	-80.51457	6	15	sand	pottery		sherd	
25	10/15/94	1994026	24.92473	-80.51457	8	1	sand	lead		sheathing	
26	10/15/94	1994026	24.92473	-80.51457	8	1	ballast timber	wood		plank	
27	10/15/94	1994027	24.92473	-80.51453	8	1	sand	iron		nail	
28	10/15/94	1994027	24.92473	-80.51453	8	1	sand	iron		nail	
29	10/15/94	1994027	24.92473	-80.51453	8	1	sand	iron		nail	
30	10/15/94	1994028	24.92473	-80.51455	8	1	sand	iron		nail	
31	10/15/94	1994028	24.92473	-80.51455	8	1	sand	iron		nail	
32	10/15/94	1994029	24.92473	-80.51453	8	1	sand	iron		nail	
33	10/15/94	1994029	24.92473	-80.51453	8	1	sand	iron		EO	
34	10/15/94	1994030	24.92473	-80.51452	8	1	ballast	iron		EO	
35	10/15/94	1994031	24.92473	-80.51450	8	7	ballast timber	wood		plank	
36	10/15/94	1994031	24.92473	-80.51450	8	1	ballast	silver	silver?	EO	
37	10/15/94	1994031	24.92473	-80.51450	8	1	ballast	composite		EO	
38	10/15/94	1994031	24.92473	-80.51450	8	1	ballast	iron		cannon bal	
39	01/17/95	1995032	24.92472	-80.51447	8	1	sand	iron		EO	
40	01/17/95	1995032	24.92472	-80.51447	8	1	sand	iron		nail	
41	01/17/95	1995032	24.92472	-80.51447	8	1	sand	iron		EO	
42	01/17/95	1995033	24.92472	-80.51445	8	1	sand	gold		rosary	
43	03/24/95	1995034	24.92465	-80.51448	8	3	ballast	iron		nail	
44	03/24/95	1995035	24.92465	-80.51452	8	1	ballast	iron		EO	
45	03/24/95	1995035	24.92465	-80.51452	8	1	ballast	iron		nail	
46	03/24/95	1995036	24.92467	-80.51453	8	3	ballast	pottery		sherd	
47	03/24/95	1995036	24.92467	-80.51453	8	1	ballast	composite	iron/pottery	gernade	
48	03/24/95	1995036	24.92467	-80.51453	8	1	ballast	iron		EO	
49	03/24/95	1995037	24.92467	-80.51457	8	1	ballast	iron		iron ring	
50	03/24/95	1995037	24.92467	-80.51457	8	1	ballast	iron		nail	
51	03/24/95	1995038	24.92468	-80.51458	8	1	ballast	iron		nail	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
52	03/24/95	1995038	24.92468	-80.51458	8	1	ballast	brick		brick	
53	03/24/95	1995039	24.92468	-80.51460	8	1	ballast	brick		brick	
54	03/24/95	1995039	24.92468	-80.51460	8	1	ballast	iron		iron ring	
55	03/24/95	1995040	24.92470	-80.51462	8	1	ballast	silver		button	
56	03/24/95	1995040	24.92470	-80.51462	8	1	ballast	glass		shard	
57	04/20/95	1995042	24.92450	-80.51495	8	1	sand	iron		EO	
58	04/20/95	1995043	24.92453	-80.51485	8	1	timber	iron		nail	
59	04/20/95	1995043	24.92453	-80.51485	8	1	timber	iron		EO	
60	04/20/95	1995043	24.92453	-80.51485	8	1	timber	iron		EO	
61	04/20/95	1995043	24.92453	-80.51485	8	1	sand	iron		EO	
62	04/20/95	1995044	24.92453	-80.51483	8	1	sand	iron		EO	
63	04/20/95	1995044	24.92453	-80.51483	8	1	sand	iron		EO	
64	04/20/95	1995045	24.92455	-80.51483	8	27	ballast	pottery		sherd	
65	04/20/95	1995045	24.92455	-80.51483	8	3	ballast	glass		shard	
66	04/20/95	1995045	24.92455	-80.51483	8	1	ballast	pottery		sherd	
67	04/27/95	1995046	24.92455	-80.51480	6	6	ballast	iron		nail	
68	04/27/95	1995046	24.92455	-80.51480	8	3	ballast	pottery		sherd	
69	04/27/95	1995046	24.92455	-80.51480	8	1	ballast	porcelain		sherd	
70	04/27/95	1995047	24.92455	-80.51480	8	3	ballast	pottery		sherd	
71	04/27/95	1995047	24.92455	-80.51480	8	1	ballast	iron		nail	
72	04/27/95	1995047	24.92455	-80.51480	8	1	ballast	iron		nail	
73	04/27/95	1995048	24.92455	-80.51480	8	1	ballast timber	iron		nail	
74	04/27/95	1995048	24.92455	-80.51480	8	1	ballast timber	iron		nail	
75	04/27/95	1995049	24.92457	-80.51488	8	1	ballast timber	composite	pottery/pewter	unknown	
76	04/27/95	1995049	24.92457	-80.51488	8	1	ballast timber	lead		sheathing	
77	04/27/95	1995049	24.92457	-80.51488	8	1	ballast timber	lithic		flint	
78	04/27/95	1995050	24.92457	-80.51487	8	1	ballast timber	iron		EO	
79	04/27/95	1995050	24.92457	-80.51487	8	1	ballast timber	iron		EO	
80	04/27/95	1995051	24.92457	-80.51482	8	1	ballast timber	copper alloy		button	
81	04/27/95	1995051	24.92457	-80.51482	8	1	ballast timber	copper alloy		nail	
82	04/27/95	1995051	24.92457	-80.51482	8	1	ballast timber	iron		EO	
83	04/27/95	1995052	24.92457	-80.51478	8	1	ballast timber	iron		EO	
84	05/06/95	1995053	24.92485	-80.51478	8	1	ballast	iron		nail	
85	05/06/95	1995054	24.92487	-80.51478	8	2	timber	lead		musket ball	
86	05/06/95	1995055	24.92488	-80.51477	8	1	timber	glass		shard	
87	05/06/95	1995058	24.92492	-80.51473	8	4	sand	pottery		sherd	
88	05/06/95	1995059	24.92492	-80.51468	8	1	sand	lead		sheathing	
89	05/07/95	1995070	24.92473	-80.51473	8	1	sand	iron		nail	
90	05/07/95	1995070	24.92473	-80.51473	8	1	sand	iron		nail	
91	05/07/95	1995073	24.92470	-80.51477	8	1	sand	porcelain		sherd	
92	05/07/95	1995074	24.92468	-80.51480	8	10	sand	pottery		sherd	
93	05/15/95	1995082	24.92453	-80.51478	8	1	sand	iron		EO	
94	05/15/95	1995083	24.92455	-80.51478	8	1	timber	iron		EO	
95	05/15/95	1995084	24.92455	-80.51478	8	2	timber	pottery		sherd	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
96	05/18/95	1995087	24.92470	-80.51490	6	1	sand	iron		nail	
97	05/18/95	1995087	24.92470	-80.51490	8	1	sand	iron		nail	
98	05/18/95	1995087	24.92470	-80.51490	8	1	sand	iron		nail	
99	05/18/95	1995088	24.92472	-80.51488	6	4	sand	pottery		sherd	
100	05/18/95	1995088	24.92472	-80.51488	8	1	sand	iron		unknown	
101	07/10/95	1995089	24.92470	-80.51475	6	1	ballast	lead		unknown	
102	07/10/95	1995089	24.92470	-80.51475	8	1	ballast	iron		nail	
103	07/10/95	1995089	24.92470	-80.51475	8	2	ballast	iron		nail	
104	07/10/95	1995090	24.92468	-80.51477	6	1	ballast	iron		EO	
105	07/10/95	1995090	24.92468	-80.51477	8	3	ballast	glass		shard	
106	07/10/95	1995090	24.92468	-80.51477	8	16	ballast	pottery		sherd	
107	07/10/95	1995091	24.92468	-80.51477	6	1	ballast	lithic		ballast	
108	07/10/95	1995091	24.92468	-80.51477	8	1	ballast timber	wood		plank	
109	07/10/95	1995091	24.92468	-80.51477	8	1	ballast	iron		EO	
110	07/10/95	1995092	24.92468	-80.51478	6	1	ballast	iron		nail	
111	07/10/95	1995092	24.92468	-80.51478	8	1	ballast	iron		EO	
112	07/10/95	1995093	24.92468	-80.51478	6	1	ballast	pottery		sherd	
113	07/10/95	1995093	24.92468	-80.51478	8	1	ballast	iron		nail	
114	07/10/95	1995093	24.92468	-80.51478	8	3	ballast	iron		nail	
115	07/12/95	1995094	24.92447	-80.51488	6	1	sand	iron		EO	
116	07/12/95	1995094	24.92447	-80.51488	8	1	sand	lead		sheathing	
117	07/12/95	1995095	24.92447	-80.51488	8	1	sand	iron		nail	
118	07/12/95	1995098	24.92452	-80.51482	6	1	sand	lead		musket ball	
119	07/12/95	1995098	24.92452	-80.51482	8	1	ballast timber	wood		barrel stave	
120	07/12/95	1995098	24.92452	-80.51482	8	4	sand	pottery		sherd	
121	07/12/95	1995099	24.92455	-80.51483	8	1	sand	copper alloy		medallior	
122	07/12/95	1995099	24.92455	-80.51483	8	1	sand	iron		nail	
123	07/12/95	1995102	24.92452	-80.51482	8	1	timber	wood		tree nai	
124	07/12/95	1995104	24.92452	-80.51482	6	1	sand	iron		nail	
125	07/12/95	1995104	24.92452	-80.51482	8	7	sand	pottery		sherd	
126	07/12/95	1995104	24.92452	-80.51482	8	1	sand	iron		nail	
127	07/12/95	1995104	24.92452	-80.51482	8	1	sand	modern		bottle cap	
128	07/15/95	1995105	24.92457	-80.51490	6	1	ballast	iron		EO	
129	07/15/95	1995105	24.92457	-80.51490	6	1	ballast	iron		EO	
130	07/15/95	1995105	24.92457	-80.51490	6	1	ballast	iron		nail	
131	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	bone		bone	
132	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	iron		eye bolt?	
133	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	iron		EO	
134	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	glass		shard	
135	07/15/95	1995105	24.92457	-80.51490	8	2	ballast	pottery		sherd	
136	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	iron		EO	
137	07/15/95	1995105	24.92457	-80.51490	8	25	ballast	pottery		sherd	
138	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	pottery		sherd	
139	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	porcelain		sherd	
140	07/15/95	1995105	24.92457	-80.51490	8	1	ballast	glass	bottle neck	shard	
141	07/15/95	1995106	24.92458	-80.51490	6	57	ballast	pottery		sherd	
142	07/15/95	1995106	24.92458	-80.51490	6	11	ballast	pottery		Majolica	
143	07/15/95	1995106	24.92458	-80.51490	6	1	ballast	glass		shard	
144	07/15/95	1995106	24.92458	-80.51490	6	1	ballast	pottery		sherd	
145	07/15/95	1995106	24.92458	-80.51490	6	1	ballast	iron		key	
146	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	iron		nail	
147	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	iron		EO	
148	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	iron		EO	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
149	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	pottery		sherd	
150	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	iron		EO	
151	07/15/95	1995106	24.92458	-80.51490	8	1	ballast	pottery		sherd	
152	07/16/95	1995107	24.92463	-80.51490	6	1	ballast	iron		nail	
153	07/16/95	1995107	24.92463	-80.51490	8	2	ballast	chemical		gun powder	
154	07/16/95	1995107	24.92463	-80.51490	8	1	ballast	iron		nail	
155	07/16/95	1995108	24.92462	-80.51492	6	1	ballast	iron		barrel hoop	
156	07/16/95	1995108	24.92462	-80.51492	6	1	ballast	iron		EO	
157	07/16/95	1995108	24.92462	-80.51492	6	1	ballast	iron		EO	
158	07/16/95	1995108	24.92462	-80.51492	8	1	ballast	lithic		flint	
159	07/16/95	1995108	24.92462	-80.51492	8	1	ballast	brick		brick	
160	07/16/95	1995109	24.92458	-80.51490	6	1	ballast	iron		nail	
161	07/16/95	1995109	24.92458	-80.51490	6	2	ballast	porcelain		sherd	
162	07/16/95	1995109	24.92458	-80.51490	8	2	ballast	bone		bone	
163	07/16/95	1995109	24.92458	-80.51490	8	1	ballast	composite	iron/gold	unknown	
164	07/16/95	1995110	24.92460	-80.51490	8	3	ballast	iron		EO	
165	07/16/95	1995110	24.92460	-80.51490	8	2	ballast	iron		EO	
166	07/16/95	1995111	24.92462	-80.51490	6	61	ballast	pottery		sherd	
167	07/16/95	1995111	24.92462	-80.51490	8	1	ballast	iron		EO	
168	07/16/95	1995112	24.92463	-80.51490	8	1	ballast	iron		EO	
169	07/16/95	1995112	24.92463	-80.51490	8	2	ballast	pottery		sherd	
170	07/16/95	1995113	24.92462	-80.51490	8	4	ballast	pottery		sherd	
171	07/16/95	1995113	24.92462	-80.51490	8	1	ballast	lead		sheathing	
172	07/16/95	1995113	24.92462	-80.51490	6	2	ballast	glass		shard	
173	07/17/95	1995114	24.92465	-80.51490	6	1	ballast timber	iron		nail	
174	07/17/95	1995114	24.92465	-80.51490	6	1	ballast timber	iron		nail	
175	07/17/95	1995114	24.92465	-80.51490	8	1	ballast timber	iron		nail	
176	07/17/95	1995114	24.92465	-80.51490	8	1	ballast timber	iron		nail	
177	07/17/95	1995114	24.92465	-80.51490	8	1	ballast timber	iron		barrel hoop	
178	07/17/95	1995115	24.92467	-80.51492	8	1	ballast timber	iron		nail	
179	07/17/95	1995115	24.92467	-80.51492	8	1	ballast timber	iron		nail	
180	07/17/95	1995115	24.92467	-80.51492	8	2	ballast timber	brick		brick	
181	07/17/95	1995115	24.92467	-80.51492	8	3	ballast timber	composite	brass/leather	button	
182	07/17/95	1995115	24.92467	-80.51492	8	1	ballast timber	organic		pit	
183	07/17/95	1995115	24.92467	-80.51492	8	1	ballast timber	iron		EO	
184	07/17/95	1995116	24.92465	-80.51492	6	1	ballast timber	pottery		smoking pipe bowl	
185	07/17/95	1995116	24.92465	-80.51492	6	3	ballast timber	porcelain		sherd	
186	07/17/95	1995116	24.92465	-80.51492	6	1	ballast timber	porcelain		sherd	
187	07/17/95	1995116	24.92465	-80.51492	6	1	ballast timber	porcelain		sherd	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
188	07/17/95	1995116	24.92465	-80.51492	8	4	ballast timber	glass		shard	
189	07/17/95	1995116	24.92465	-80.51492	8	1	ballast timber	lithic		flint	
190	07/17/95	1995116	24.92465	-80.51492	8	1	ballast timber	pottery		figurine head	deer
191	07/17/95	1995116	24.92465	-80.51492	8	1	ballast timber	iron		EO	
192	07/17/95	1995116	24.92465	-80.51492	8	1	ballast timber	iron		EO	
193	07/17/95	1995117	24.92465	-80.51490	6	1	ballast timber	lead		sheathing	
194	07/17/95	1995117	24.92465	-80.51490	6	7	ballast timber	pottery		sherd	
195	07/17/95	1995117	24.92465	-80.51490	6	89	ballast timber	pottery		sherd	
196	07/17/95	1995117	24.92465	-80.51490	6	1	ballast timber	pottery		sherd	
197	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	iron		nail	
198	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	iron		nail	
199	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	iron		EO	
200	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	bone		rat shoulder blade	
201	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	pottery		sherd	
202	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	pottery		Majolica	
203	07/17/95	1995117	24.92465	-80.51490	8	4	ballast timber	pottery		sherd	
204	07/17/95	1995117	24.92465	-80.51490	8	1	ballast timber	iron		EO	
205	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
206	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
207	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
208	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
209	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
210	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
211	07/18/95	1995118	24.92448	-80.51473	8	1	ballast timber	iron		nail	
212	07/18/95	1995119	24.92448	-80.51475	6	1	ballast timber	iron		nail	
213	07/18/95	1995119	24.92448	-80.51475	6	1	ballast timber	iron		iron ring	
214	07/18/95	1995119	24.92448	-80.51475	6	2	ballast timber	bone		bone	
215	07/18/95	1995119	24.92448	-80.51475	6	1	ballast timber	iron		nail	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
216	07/18/95	1995119	24.92448	-80.51475	6	1	ballast timber	lead		musket ball	
217	07/18/95	1995119	24.92448	-80.51475	6	55	ballast timber	pottery		sherd	
218	07/18/95	1995119	24.92448	-80.51475	8	6	ballast timber	pottery		sherd	
219	07/18/95	1995119	24.92448	-80.51475	8	1	ballast timber	pottery		sherd	
220	07/18/95	1995119	24.92448	-80.51475	8	1	ballast timber	copper alloy		ring	
221	08/12/95	1995120	24.92450	-80.51475	6	1	ballast	pottery		sherd	
222	08/12/95	1995120	24.92450	-80.51475	6	1	ballast	iron		nail	
223	08/12/95	1995120	24.92450	-80.51475	6	4	ballast	iron		nail	
224	08/12/95	1995120	24.92450	-80.51475	6	3	ballast	iron		nail	
225	08/12/95	1995120	24.92450	-80.51475	6	1	ballast	bone		bone	
226	08/12/95	1995120	24.92450	-80.51475	6	1	ballast	pottery		handle	
227	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	iron		barrel hoop	
228	08/12/95	1995120	24.92450	-80.51475	8	5	ballast	iron		nail	
229	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	iron		nail	
230	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	pottery		sherd	
231	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	pottery		sherd	
232	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	pottery		sherd	
233	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	porcelain		sherd	
234	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	porcelain		sherd	
235	08/12/95	1995120	24.92450	-80.51475	8	2	ballast	porcelain		sherd	
236	08/12/95	1995120	24.92450	-80.51475	8	1	ballast	copper alloy		button	
237	08/12/95	1995121	24.92450	-80.51475	8	133	ballast	pottery		sherd	
238	08/12/95	1995121	24.92450	-80.51475	8	3	ballast	glass		shard	
239	08/12/95	1995121	24.92450	-80.51475	8	2	ballast	glass		shard	
240	08/12/95	1995121	24.92450	-80.51475	8	1	ballast	pewter		pewter	
241	08/12/95	1995121	24.92450	-80.51475	8	1	ballast	iron		EO	
242	08/12/95	1995121	24.92450	-80.51475	8	1	ballast	iron		EO	
243	08/12/95	1995121	24.92450	-80.51475	8	1	ballast	iron		nail	
244	08/12/95	1995121	24.92450	-80.51475	8	1	ballast	silver		coin	eight rea
245	12/02/95	1995122	24.92453	-80.51447	8	1	sand	iron		nail	
246	06/23/96	1996001	24.92458	-80.51500	8	1	ballast	iron		trunion cap	
247	12/17/95	1995123	24.92452	-80.51447	8	1	sand	iron		EO	
248	12/17/95	1995123	24.92452	-80.51448	8	1	sand	pottery		sherd	
249	05/17/00	2000006	24.92470	-80.51498	1	1	sand	iron		nail	
266	06/23/96	1996001	24.92458	-80.51500	8	1	ballast	copper alloy		buckle	
267	12/17/95	1995123	24.92452	-80.51448	8	1	sand	iron		trunion cap	
268	06/23/96	1996001	24.92458	-80.51500	8	1	ballast	silver		coin	
272	07/05/98	1998022	24.92713	-80.51858	0.5	1	sand	iron		key	
273	07/18/98	1998009	24.92460	-80.51490	5	1	sand	iron		nail	
274	07/18/98	1998012	24.92450	-80.51487	4	2	sand	pottery		sherd	
297	07/14/97	1997002	24.92445	-80.51497	6	1	sand	copper alloy		nail	
298	07/14/97	1997004	24.92450	-80.51498	6	1	sand	iron		nail	
299	07/14/97	1997005	24.92457	-80.51498	6	1	sand	silver		unknown	
300	07/14/97	1997007	24.92487	-80.51498	6	1	sand	iron		axe	
301	07/15/97	1997008	24.92488	-80.51502	6	8	sand	pottery		Majolica	
302	07/15/97	1997009	24.92485	-80.51500	6	2	sand	pottery		sherd	
303	05/17/00	2000016	24.92467	-80.51505	3	3	sand	pottery		Majolica	
304	05/27/00	2000023	24.92452	-80.51495	6	1	ballast timber	glass		shard	
306	05/27/00	2000025	24.92445	-80.51492	6	4	sand	pottery		sherd	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
307	05/28/00	2000027	24.92445	-80.51497	3	1	sand	iron		nail	NR
308	05/28/00	2000027	24.92445	-80.51497	3	1	ballast timber	wood		plank	
309	05/28/00	2000027	24.92445	-80.51497	3	3	sand	pottery		sherd	
310	05/28/00	2000028	24.92452	-80.51493	8	1	ballast	porcelain		sherd	
311	05/28/00	2000028	24.92452	-80.51493	10	5	ballast	pottery		sherd	
312	05/28/00	2000028	24.92452	-80.51493	9	3	ballast	pottery		sherd	
313	05/28/00	2000029	24.92455	-80.51493	6.5	1	ballast	bone		tooth	
314	05/28/00	2000029	24.92455	-80.51493	6.5	1	ballast	iron		nail	
315	05/28/00	2000030	24.92457	-80.51490	6	8	ballast	pottery		sherd	
316	05/28/00	2000030	24.92457	-80.51490	4	1	ballast	porcelain		sherd	
317	05/28/00	2000030	24.92457	-80.51490	6.5	2	ballast	glass		shard	
318	05/28/00	2000030	24.92457	-80.51490	6.5	1	ballast timber	wood		plank	
319	05/28/00	2000031	24.92462	-80.51492	6	1	ballast	pottery		sherd	
320	05/28/00	2000032	24.92457	-80.51490	6	2	ballast timber	wood		plank	
321	05/28/00	2000032	24.92457	-80.51490	7	1	ballast	organic		leather	
322	05/28/00	2000032	24.92457	-80.51490	7	1	ballast	brick		brick	
323	05/28/00	2000033	24.92455	-80.51485	6	1	ballast	copper alloy		button	silver?
324	05/29/00	2000034	24.92460	-80.51497	6	1	ballast timber	wood		plank	
325	05/29/00	2000034	24.92460	-80.51497	6	4	ballast	glass		shard	
326	05/29/00	2000034	24.92460	-80.51497	8	1	ballast	iron		nail	
327	05/29/00	2000034	24.92460	-80.51497	8	20	ballast	pottery		sherd	
328	05/29/00	2000034	24.92460	-80.51497	11	1	ballast	iron		nail	
329	05/29/00	2000034	24.92460	-80.51497	11	2	ballast	pottery		sherd	
330	05/29/00	2000034	24.92460	-80.51497	10	1	ballast	brick		brick	
331	05/29/00	2000034	24.92460	-80.51497	10	9	ballast	lithic		ballast	
332	06/01/00	2000036	24.92468	-80.51492	3	1	ballast timber	wood		plank	
333	06/01/00	2000036	24.92468	-80.51492	5	1	ballast timber	wood		plank	
334	06/01/00	2000038	24.92468	-80.51490	6	1	ballast timber	wood		plank	
335	06/01/00	2000041	24.92473	-80.51492	7	1	ballast timber	wood		plank	
336	05/30/00	2000035	24.92460	-80.51497	6	1	ballast timber	wood		plank	
337	05/30/00	2000035	24.92460	-80.51497	5	1	ballast timber	wood		plank	
338	06/01/00	2000041	24.92473	-80.51492	8	1	ballast timber	wood		plank	
339	06/02/00	2000043	24.92460	-80.51482	6	1	ballast timber	wood		plank	
340	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	glass		shard	
341	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		button	silver?
342	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	pottery	figurene	brick	
343	05/30/00	2000035	24.92460	-80.51497	5	4	ballast	bone		bone	
344	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		nail	
345	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	porcelain		sherd	
346	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		EO	
347	05/30/00	2000035	24.92460	-80.51497	5	6	ballast	lithic		ballast	
348	05/30/00	2000035	24.92460	-80.51497	5	26	ballast	pottery		sherd	
349	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		nail	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
350	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		nail	NR
351	05/30/00	2000035	24.92460	-80.51497	5	1	ballast	iron		nail	NR
352	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	iron		nail	NR
353	05/31/00	2000035	24.92460	-80.51497	10	52	ballast	pottery		sherd	
354	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	composite	lithic/iron	ballast with nai	
355	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	iron		nail	
356	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	iron		barrel hoop	
357	05/31/00	2000035	24.92460	-80.51497	10	5	ballast	lithic		ballast	
358	05/31/00	2000035	24.92460	-80.51497	10	3	ballast	modern		modern	
359	05/31/00	2000035	24.92460	-80.51497	10	5	ballast	bone		bone	
360	05/31/00	2000035	24.92460	-80.51497	10	3	ballast	pottery		sherd	
361	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	glass		shard	
362	05/31/00	2000035	24.92460	-80.51497	10	1	ballast	porcelain		sherd	
363	05/31/00	2000035	24.92460	-80.51497	10	5	ballast	iron		EO	
364	06/01/00	2000036	24.92468	-80.51492	5	1	ballast timber	iron		EO	
365	06/01/00	2000037	24.92467	-80.51490	5	36	ballast timber	pottery		sherd	
366	06/01/00	2000039	24.92470	-80.51492	6	1	ballast timber	bone		bone	
367	06/01/00	2000040	24.92472	-80.51490	6	1	ballast timber	glass		shard	
368	06/01/00	2000041	24.92473	-80.51492	8	3	ballast timber	lithic		ballast	
369	06/01/00	2000041	24.92473	-80.51492	8	7	ballast timber	pottery		sherd	
370	06/01/00	2000041	24.92473	-80.51492	8	1	ballast timber	brick		brick	
371	06/01/00	2000041	24.92473	-80.51492	8	1	ballast timber	iron		EO	
372	06/01/00	2000041	24.92473	-80.51492	8	1	ballast timber	iron		EO	
373	06/01/00	2000041	24.92473	-80.51492	8	1	ballast timber	iron		EO	
375	06/02/00	2000042	24.92460	-80.51483	2.5	1	ballast timber	wood		plank	
376	06/02/00	2000042	24.92460	-80.51483	5	1	ballast timber	wood		plank	
377	08/17/01	2001018	24.92475	-80.51495	11	1	ballast timber	wood		plank	5
378	06/02/00	2000042	24.92460	-80.51483	6	20	ballast timber	pottery		sherd	
379	06/02/00	2000043	24.92460	-80.51482	7	35	ballast timber	pottery		sherd	
380	06/02/00	2000046	24.92460	-80.51482	7	2	ballast timber	iron		EO	
381	06/02/00	2000043	24.92460	-80.51482	7	6	ballast timber	bone		bone	
382	06/02/00	2000044	24.92462	-80.51483	7	4	ballast timber	glass		shard	
383	06/02/00	2000042	24.92460	-80.51483	5	1	ballast timber	porcelain		sherd	
384	06/04/00	2000048	24.92443	-80.51472	5	1	sand	iron		EO	
385	06/04/00	2000048	24.92443	-80.51472	5.5	1	sand	iron		barrel hoop	
386	06/04/00	2000049	24.92442	-80.51470	6	2	sand	iron		nail	NR

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
387	06/04/00	2000049	24.92442	-80.51470	7	1	ballast timber	iron		EO	
388	06/04/00	2000049	24.92442	-80.51470	7	160	ballast	pottery		sherd	
389	06/04/00	2000049	24.92442	-80.51470	7	9	ballast	glass		shard	
390	06/04/00	2000049	24.92442	-80.51470	7	1	ballast	pottery		sherd	
391	06/04/00	2000049	24.92442	-80.51470	4	5	ballast	pottery		sherd	
392	06/04/00	2000049	24.92442	-80.51470	6	4	ballast	bone		bone	
393	06/04/00	2000049	24.92442	-80.51470	7	8	ballast	iron		EO	
394	06/04/00	2000049	24.92442	-80.51470	7	3	ballast	iron		nail	NR
395	06/20/00	2000054	24.92455	-80.51467	6	1	ballast timber	wood		plank	
396	06/20/00	2000055	24.92457	-80.51467	7	1	sand	iron		nail	
397	06/21/00	2000056	24.92447	-80.51472	4	10	sand	pottery		sherd	
398	06/21/00	2000059	24.92447	-80.51475	6	1	sand	pottery		Majolica	
399	06/21/00	2000060	24.92448	-80.51475	6	1	sand	pottery		terracotta bow	
400	06/21/00	2000061	24.92448	-80.51473	6	1	sand	silver		silver buckle	
401	07/14/00	2000073	24.92443	-80.51488	7	1	ballast timber	wood		plank	
402	07/14/00	2000071	24.92440	-80.51488	5	1	ballast timber	wood		plank	
403	08/19/00	2000085	24.92458	-80.51507	6	1	timber	wood		plank	
404	08/17/01	2001019	24.92468	-80.51493	14	1	ballast timber	wood		plank	332,333,334,335,337,404,405,407
405	08/17/01	2001018	24.92475	-80.51495	11	1	ballast timber	wood		plank	5
406	08/17/01	2001018	24.92475	-80.51495	11	1	ballast timber	wood		plank	5
407	07/05/00	2000107	24.92500	-80.51600	4	1	sand	pottery		sherd	12
408	07/05/00	2000108	24.92532	-80.51640	4	1	sand	copper alloy		powder flask top	13
409	07/07/00	2000111	24.92523	-80.51613	4	1	sand	pottery		sherd	16
410	07/13/00	2000144	24.92513	-80.51625	4	3	sand	brick		brick	49
411	05/27/00	2000019	24.92452	-80.51487	3	1	ballast timber	wood		plank	
412	05/27/00	2000022	24.92452	-80.51492	6	15	ballast timber	pottery		sherd	
481	06/29/00	2000102	24.92450	-80.51530	4	1	sand	composite		pistol	7
482	07/03/00	2000103	24.92450	-80.51530	1	1	sand	iron		nail	8
483	07/11/00	2000124	24.92472	-80.51542	4	1	sand	porcelain		sherd	29
485	07/05/00	2000104	24.92482	-80.51500	4	1	sand	iron		iron ring	9
486	07/05/00	2000105	24.92492	-80.51550	4	1	sand	modern		unknown	10
487	07/05/00	2000106	24.92502	-80.51565	4	1	sand	iron		iron	11
489	06/22/00	2000098	24.92523	-80.51567	4	4	sand	pottery		sherd	3
490	06/22/00	2000099	24.92495	-80.51555	4	2	sand	lead		sheathing	4
491	06/22/00	2000100	24.92502	-80.51547	4	3	sand	iron		nail	5
492	07/05/00	2000108	24.92532	-80.51640	4	1	sand	modern		glass	13
493	07/07/00	2000109	24.92518	-80.51605	4	3	sand	brick		brick	14
494	07/07/00	2000111	24.92523	-80.51613	4	1	sand	pottery		sherd	16
497	07/11/00	2000119	24.92482	-80.51562	4	1	sand	pottery		sherd	24
1497	07/12/00	2000063	24.92442	-80.51467	6	1	sand	ivory		lice comb	
1498	07/12/00	2000064	24.92442	-80.51468	6	1	ballast	pottery		sherd	
1499	07/12/00	2000064	24.92442	-80.51468	6	18	ballast	pottery		sherd	
1500	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	glass		shard	
1501	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	pottery		sherd	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
1502	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	bone		bone	
1503	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	pottery		sherd	
1504	07/12/00	2000065	24.92443	-80.51470	6	8	ballast	pottery		sherd	
1505	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	iron		nail	
1506	07/12/00	2000065	24.92443	-80.51470	6	1	ballast	glass		shard	
1507	07/12/00	2000066	24.92443	-80.51472	6	14	ballast	pottery		sherd	
1508	07/12/00	2000066	24.92443	-80.51472	6	1	ballast	organic		flower	
1509	07/12/00	2000066	24.92443	-80.51472	6	28	ballast	pottery		Majolica	
1510	07/12/00	2000066	24.92443	-80.51472	6	2	ballast	bone		bone	
1511	07/12/00	2000066	24.92443	-80.51472	6	1	ballast	iron		EO	
1512	07/12/00	2000066	24.92443	-80.51472	6	1	ballast	pewter		pewter	
1513	07/12/00	2000066	24.92443	-80.51472	6	1	ballast	porcelain		sherd	
1514	07/12/00	2000066	24.92443	-80.51472	6	11	ballast	pottery		sherd	
1515	07/12/00	2000067	24.92443	-80.51473	6	1	ballast	porcelain		sherd	
1516	07/12/00	2000067	24.92443	-80.51473	6	24	ballast	pottery		sherd	
1517	07/12/00	2000067	24.92443	-80.51473	6	4	ballast	glass		shard	
1518	07/12/00	2000067	24.92443	-80.51473	6	1	ballast	bone		bone	
1519	07/12/00	2000067	24.92443	-80.51473	6	4	ballast	iron		EO	
1520	07/12/00	2000067	24.92443	-80.51473	6	1	ballast	iron		EO	
1521	07/12/00	2000067	24.92443	-80.51473	6	2	ballast	lead		sheathing	
1522	07/12/00	2000068	24.92443	-80.51472	9	1	ballast	iron		EO	NR
1523	07/12/00	2000068	24.92443	-80.51472	9	23	ballast	pottery		sherd	
1524	07/12/00	2000068	24.92443	-80.51472	9	2	ballast	bone		bone	
1525	07/12/00	2000069	24.92443	-80.51473	9	3	ballast	glass		shard	
1526	07/12/00	2000068	24.92443	-80.51472	9	6	ballast	iron		nail	NR
1527	07/12/00	2000068	24.92443	-80.51472	9	1	ballast	silver		button	
1528	07/12/00	2000069	24.92443	-80.51473	9	3	ballast	pottery		sherd	
1529	07/12/00	2000069	24.92443	-80.51473	9	1	ballast	iron		nail	
1530	07/12/00	2000069	24.92443	-80.51473	9	8	ballast	iron		EO	NR
1531	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	copper alloy		ring	silver?
1532	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	copper alloy		button	silver?
1533	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	pottery		Majolica	
1534	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	copper alloy		button	silver?
1535	07/13/00	2000070	24.92442	-80.51482	11	58	ballast	pottery		sherd	
1536	07/13/00	2000070	24.92442	-80.51482	11	7	ballast	glass		shard	
1537	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	iron		EO	
1538	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	porcelain		sherd	
1539	07/13/00	2000070	24.92442	-80.51482	11	30	ballast	pottery		sherd	
1540	07/13/00	2000070	24.92442	-80.51482	11	5	ballast	glass		shard	
1541	07/13/00	2000070	24.92442	-80.51482	11	2	ballast	bone		bone	
1542	07/13/00	2000070	24.92442	-80.51482	11	13	ballast	iron		EO	NR
1543	07/13/00	2000070	24.92442	-80.51482	11	1	ballast	lead		musket ball	
1544	07/13/00	2000070	24.92442	-80.51482	11	7	ballast	pottery		sherd	
1545	07/13/00	2000070	24.92442	-80.51482	11	4	ballast	lithic		ballast	for FKNMS display
1546	07/14/00	2000072	24.92442	-80.51488	2	1	ballast	porcelain		sherd	
1547	07/14/00	2000073	24.92443	-80.51488	7	1	ballast	bone		bone	
1548	07/14/00	2000073	24.92443	-80.51488	7	1	ballast	lead		musket ball	
1549	07/14/00	2000074	24.92445	-80.51488	7	14	ballast	pottery		sherd	
1550	07/14/00	2000075	24.92443	-80.51490	7	1	ballast	iron		nail	
1551	07/14/00	2000079	24.92442	-80.51482	8	1	ballast	iron		EO	NR
1552	07/14/00	2000081	24.92442	-80.51478	10	1	ballast timber	pottery		sherd	
1553	07/14/00	2000082	24.92443	-80.51477	10	11	ballast	iron		EO	NR
1554	07/14/00	2000082	24.92443	-80.51477	10	14	ballast	pottery		sherd	

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
1555	07/14/00	2000082	24.92443	-80.51477	10	3	ballast	iron		EO	
1556	07/14/00	2000082	24.92443	-80.51477	10	6	ballast	glass		shard	
1557	07/14/00	2000082	24.92443	-80.51477	10	1	ballast	bone		bone	
1558	08/19/00	2000084	24.92457	-80.51505	5	1	sand	pottery		sherd	
1559	08/19/00	2000086	24.92460	-80.51507	6	2	sand	iron		nail	NR
1560	07/19/01	2001002	24.92502	-80.51488	1	1	ballast	iron		musket cap	2
1561	07/21/01	2001005	24.92482	-80.51430	1	2	sand	iron		cannon bal	5
1562	10/05/01	2001038	24.92453	-80.51540	10	1	sand	iron		EO	26
1563	10/05/01	2001045	24.92455	-80.51520	10	3	sand	iron		EO	33
1564	10/06/01	2001056	24.92443	-80.51512	10	3	sand	iron		nail	44
1565	08/27/01	2001060	24.92508	-80.51828	1	1	sand	brick		brick	2 NR
1566	08/27/01	2001059	24.92567	-80.51712	2	1	sand	composite		pistol	1
1576	08/10/01	2001009	24.92528	-80.51575	8	1	ballast	porcelain		sherd	4
1577	08/10/01	2001007	24.92527	-80.51573	8	1	ballast	iron		nail	2
1578	08/10/01	2001009	24.92528	-80.51575	8	6	sand	pottery		sherd	4
1579	08/10/01	2001008	24.92527	-80.51577	8	1	ballast	iron		EO	3
1580	08/10/01	2001008	24.92527	-80.51577	8	1	ballast	lithic		ballast	3
1581	08/10/01	2001006	24.92523	-80.51572	8	2	sand	brick		brick	1
1582	08/17/01	2001016	24.92468	-80.51503	10	2	ballast	iron		EO	3
1583	08/17/01	2001015	24.92467	-80.51508	9	1	ballast	iron		nail	2
1584	08/17/01	2001016	24.92468	-80.51503	10	1	ballast	iron		key	
1585	08/17/01	2001017	24.92473	-80.51498	10	1	ballast	silver		coin	4
1586	08/17/01	2001017	24.92473	-80.51498	10	1	ballast	iron		key	
1587	08/17/01	2001017	24.92473	-80.51498	10	1	ballast	iron		EO	4
1588	08/17/01	2001017	24.92473	-80.51498	10	1	ballast timber	wood		plank	4
1589	08/17/01	2001017	24.92473	-80.51498	10	1	ballast	iron		EO	4
1590	08/17/01	2001018	24.92475	-80.51495	11	1	ballast	pottery		sherd	5
1591	08/17/01	2001018	24.92475	-80.51495	11	2	ballast	iron		EO	5
1592	08/18/01	2001022	24.92457	-80.51497	11	3	ballast	iron		EO	9
1593	08/17/01	2001019	24.92468	-80.51493	14	1	ballast	pottery		sherd	6
1594	08/17/01	2001019	24.92468	-80.51493	14	1	ballast	glass		shard	6
1595	08/18/01	2001023	24.92452	-80.51502	11	5	ballast	lead		sheathing	10
1596	08/18/01	2001023	24.92452	-80.51502	11	1	ballast	copper alloy		unknown	10
1597	08/18/01	2001023	24.92452	-80.51502	11	1	ballast	lead		sheathing	10
1598	08/18/01	2001023	24.92452	-80.51502	11	1	ballast	pottery		sherd	10
1599	08/18/01	2001023	24.92452	-80.51502	11	1	ballast	glass		shard	10
1600	08/17/01	2001019	24.92468	-80.51493	14	2	sand	brick		brick	
1601	08/18/01	2001023	24.92452	-80.51502	11	2	ballast	iron		nail	10 NR
1602	08/18/01	2001024	24.92452	-80.51505	11	1	ballast	copper alloy		scale weighl	11
1603	08/18/01	2001024	24.92452	-80.51505	11	1	ballast	pottery		sherd	11
1604	08/18/01	2001024	24.92452	-80.51505	11	3	ballast	lead		sheathing	11
1605	08/18/01	2001024	24.92452	-80.51505	11	4	ballast	pottery		sherd	11
1606	08/18/01	2001024	24.92452	-80.51505	11	1	ballast	iron		EO	11
1607	08/18/01	2001024	24.92452	-80.51505	11	1	ballast	iron		nail	11 NR
1608	08/18/01	2001024	24.92452	-80.51505	11	1	ballast	iron		EO	11
1609	08/18/01	2001026	24.92448	-80.51498	11	1	ballast	iron		nail	13
1610	08/18/01	2001026	24.92448	-80.51498	11	1	ballast	lead		sheathing	13
1611	08/18/01	2001026	24.92448	-80.51498	11	1	ballast	copper alloy		button	13
1612	08/18/01	2001025	24.92450	-80.51502	11	1	ballast	iron		EO	12
1613	08/18/01	2001025	24.92450	-80.51502	11	1	ballast	iron		nail	12 NR
1614	08/18/01	2001027	24.92443	-80.51503	11	1	ballast	chemical		graphite?	14
1615	08/18/01	2001027	24.92443	-80.51503	11	1	ballast	iron		nail	14
1616	08/18/01	2001027	24.92443	-80.51503	11	1	ballast	iron		EO	14
1617	08/18/01	2001026	24.92448	-80.51498	11	3	ballast	lithic		ballast	13

TAG #	Date	Hole	DecLat	DecLong	rec depth ft	Qt.	bottom	primary composition	secondary composition	description	comments
1618	08/18/01	2001029	24.92450	-80.51493	11	1	sand	iron		EO	16
1619	08/18/01	2001030	24.92450	-80.51498	11	3	sand	iron		EO	17
1621	09/01/01	2001036	24.92455	-80.51508	10	1	sand	copper alloy		buckle	23
1622	09/01/01	2001036	24.92455	-80.51508	10	1	sand	iron		key	23
1623	09/01/01	2001036	24.92455	-80.51508	10	1	sand	iron		sword guard	23
1624	09/01/01	2001036	24.92455	-80.51508	10	2	sand	iron		EO	23
1625	09/01/01	2001035	24.92452	-80.51512	9	3	sand	iron		EO	22
1626	08/19/01	2001031	24.92470	-80.51525	11	3	sand	iron		EO	18
1627	10/05/01	2001039	24.92455	-80.51537	10	1	sand	iron		EO	27
1628	10/05/01	2001040	24.92455	-80.51533	10	1	sand	iron		EO	28
1629	10/05/01	2001042	24.92457	-80.51527	10	1	sand	iron		EO	30
1630	10/05/01	2001044	24.92457	-80.51523	10	1	sand	unknown		button	32
1631	10/05/01	2001043	24.92453	-80.51523	10	3	sand	iron		EO	31
1632	10/06/01	2001052	24.92443	-80.51520	10	1	sand	iron		bayonet	40
1633	10/06/01	2001053	24.92445	-80.51517	10	1	sand	iron		EO	41
1634	10/06/01	2001055	24.92443	-80.51513	10	1	sand	iron		cannon bal	43
1635	10/06/01	2001055	24.92443	-80.51513	10	4	sand	iron		nail	43
1899	07/11/00	2000124	24.92472	-80.51542	4	3	sand	pottery		sherd	29
1900	07/13/00	2000145	24.92515	-80.51623	4	1	sand	iron		iron	50
1908	07/13/00	2000148	24.92515	-80.51630	4	1	sand	brick		brick	53

Date	Hole	DecLat	Negddlong
8/20/94	1994001	24.92472	-80.51480
8/20/94	1994002	24.92472	-80.51482
8/20/94	1994003	24.92470	-80.51483
9/1/94	1994004	24.92472	-80.51480
9/1/94	1994005	24.92472	-80.51480
9/1/94	1994006	24.92472	-80.51482
9/1/94	1994007	24.92472	-80.51482
9/1/94	1994008	24.92470	-80.51483
9/1/94	1994009	24.92470	-80.51485
9/2/94	1994010	24.92473	-80.51480
9/2/94	1994011	24.92473	-80.51480
9/2/94	1994012	24.92472	-80.51482
9/2/94	1994013	24.92472	-80.51483
9/2/94	1994014	24.92472	-80.51483
9/2/94	1994015	24.92472	-80.51483
9/4/94	1994016	24.92472	-80.51468
9/4/94	1994017	24.92472	-80.51470
9/4/94	1994018	24.92472	-80.51470
9/4/94	1994019	24.92472	-80.51472
9/4/94	1994020	24.92472	-80.51473
9/4/94	1994021	24.92472	-80.51475
9/4/94	1994022	24.92472	-80.51475
9/4/94	1994023	24.92472	-80.51477
9/4/94	1994024	24.92472	-80.51478
9/4/94	1994025	24.92472	-80.51478
10/15/94	1994026	24.92473	-80.51457
10/15/94	1994027	24.92473	-80.51453
10/15/94	1994028	24.92473	-80.51455
10/15/94	1994029	24.92473	-80.51453
10/15/94	1994030	24.92473	-80.51452
10/15/94	1994031	24.92473	-80.51450
1/17/95	1995032	24.92472	-80.51447
1/17/95	1995033	24.92472	-80.51445
3/24/95	1995034	24.92465	-80.51448
3/24/95	1995035	24.92465	-80.51452
3/24/95	1995036	24.92467	-80.51453
3/24/95	1995037	24.92467	-80.51457
3/24/95	1995038	24.92468	-80.51458
3/24/95	1995039	24.92468	-80.51460
3/24/95	1995040	24.92470	-80.51462
4/20/95	1995041	24.92448	-80.51495
4/20/95	1995042	24.92450	-80.51495
4/20/95	1995043	24.92453	-80.51485
4/20/95	1995044	24.92453	-80.51483
4/20/95	1995045	24.92455	-80.51483
4/27/95	1995046	24.92455	-80.51480
4/27/95	1995047	24.92455	-80.51480
4/27/95	1995048	24.92455	-80.51480
4/27/95	1995049	24.92457	-80.51488
4/27/95	1995050	24.92457	-80.51487

Date	Hole	DecLat	Negddlong
4/27/95	1995051	24.92457	-80.51482
4/27/95	1995052	24.92457	-80.51478
5/6/95	1995053	24.92485	-80.51478
5/6/95	1995054	24.92487	-80.51478
5/6/95	1995055	24.92488	-80.51477
5/6/95	1995056	24.92490	-80.51477
5/6/95	1995057	24.92490	-80.51475
5/6/95	1995058	24.92492	-80.51473
5/6/95	1995059	24.92492	-80.51468
5/6/95	1995060	24.92493	-80.51470
5/6/95	1995061	24.92495	-80.51467
5/6/95	1995065	24.92492	-80.51487
5/6/95	1995066	24.92492	-80.51485
5/7/95	1995067	24.92468	-80.51473
5/7/95	1995068	24.92473	-80.51472
5/7/95	1995069	24.92473	-80.51468
5/7/95	1995070	24.92473	-80.51473
5/7/95	1995071	24.92473	-80.51473
5/7/95	1995072	24.92470	-80.51475
5/7/95	1995073	24.92470	-80.51477
5/7/95	1995074	24.92468	-80.51480
5/7/95	1995075	24.92467	-80.51485
5/7/95	1995076	24.92467	-80.51485
5/7/95	1995077	24.92467	-80.51488
5/7/95	1995078	24.92467	-80.51487
5/7/95	1995079	24.92477	-80.51482
5/7/95	1995080	24.92475	-80.51485
5/7/95	1995081	24.92472	-80.51488
5/15/95	1995082	24.92453	-80.51478
5/15/95	1995083	24.92455	-80.51478
5/15/95	1995084	24.92455	-80.51478
5/15/95	1995085	24.92457	-80.51478
5/15/95	1995086	24.92457	-80.51478
5/18/95	1995087	24.92470	-80.51490
5/18/95	1995088	24.92472	-80.51488
7/10/95	1995089	24.92470	-80.51475
7/10/95	1995090	24.92468	-80.51477
7/10/95	1995091	24.92468	-80.51477
7/10/95	1995092	24.92468	-80.51478
7/10/95	1995093	24.92468	-80.51478
7/12/95	1995094	24.92447	-80.51488
7/12/95	1995095	24.92447	-80.51488
7/12/95	1995096	24.92448	-80.51487
7/12/95	1995097	24.92453	-80.51483
7/12/95	1995098	24.92452	-80.51482
7/12/95	1995099	24.92455	-80.51483
7/12/95	1995100	24.92455	-80.51482
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7/12/95	1995102	24.92452	-80.51482
7/12/95	1995103	24.92452	-80.51482

Date	Hole	DecLat	Negddlong
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7/15/95	1995106	24.92458	-80.51490
7/16/95	1995107	24.92463	-80.51490
7/16/95	1995108	24.92462	-80.51492
7/16/95	1995109	24.92458	-80.51490
7/16/95	1995110	24.92460	-80.51490
7/16/95	1995111	24.92462	-80.51490
7/16/95	1995112	24.92463	-80.51490
7/16/95	1995113	24.92462	-80.51490
7/17/95	1995114	24.92465	-80.51490
7/17/95	1995115	24.92467	-80.51492
7/17/95	1995116	24.92465	-80.51492
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7/18/95	1995118	24.92448	-80.51473
7/18/95	1995119	24.92448	-80.51475
8/12/95	1995120	24.92450	-80.51475
8/12/95	1995121	24.92450	-80.51475
12/2/95	1995122	24.92453	-80.51447
12/17/95	1995123	24.92452	-80.51447
7/14/97	1997001	24.92443	-80.51493
7/14/97	1997002	24.92445	-80.51497
7/14/97	1997003	24.92447	-80.51498
7/14/97	1997004	24.92450	-80.51498
7/14/97	1997005	24.92457	-80.51498
7/14/97	1997006	24.92487	-80.51495
7/14/97	1997007	24.92487	-80.51498
7/15/97	1997008	24.92488	-80.51502
7/15/97	1997009	24.92485	-80.51500
7/15/97	1997010	24.92472	-80.51493
7/15/97	1997011	24.92485	-80.51497
7/17/97	1997012	24.92493	-80.51508
7/17/97	1997013	24.92510	-80.51490
7/17/97	1997014	24.92515	-80.51492
7/17/97	1997015	24.92507	-80.51493
7/17/97	1997016	24.92500	-80.51493
7/17/97	1997017	24.92495	-80.51500
7/21/97	1997018	24.92188	-80.51495
7/21/97	1997019	24.92188	-80.51483
7/21/97	1997020	24.92198	-80.51495
7/21/97	1997021	24.92193	-80.51490
7/21/97	1997022	24.92180	-80.51482
7/21/97	1997023	24.92212	-80.51490
7/30/97	1997024	24.92488	-80.51587
6/6/98	1998001	24.92728	-80.51860
6/6/98	1998002	24.92728	-80.51862
6/7/98	1998003	24.92730	-80.51862
6/7/98	1998004	24.92730	-80.51863
6/7/98	1998005	24.92728	-80.51853
6/7/98	1998006	24.92728	-80.51853

Date	Hole	DecLat	Negddlong
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7/18/98	1998010	24.92458	-80.51487
7/18/98	1998011	24.92452	-80.51487
7/18/98	1998012	24.92450	-80.51487
7/18/98	1998013	24.92448	-80.51490
7/19/98	1998014	24.92457	-80.51435
7/19/98	1998015	24.92452	-80.51448
7/19/98	1998016	24.92450	-80.51448
7/19/98	1998017	24.92448	-80.51450
7/19/98	1998018	24.92445	-80.51447
7/19/98	1998019	24.92460	-80.51448
6/17/98	1998020	24.92700	-80.51858
7/5/98	1998021	24.92697	-80.51862
7/5/98	1998022	24.92713	-80.51858
7/19/98	1998023	24.92460	-80.51440
6/2/98	1998024	24.92715	-80.51858
8/16/99	1999001	24.92505	-80.51705
8/20/99	1999002	24.92550	-80.51705
8/21/99	1999003	24.92532	-80.51720
8/24/99	1999004	24.92540	-80.51573
8/25/99	1999005	24.92500	-80.51583
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8/27/99	1999007	24.92650	-80.51683
9/6/99	1999008	24.92553	-80.51617
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5/16/00	2000003	24.92498	-80.51448
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5/16/00	2000005	24.92480	-80.51438
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5/17/00	2000007	24.92467	-80.51497
5/17/00	2000008	24.92468	-80.51498
5/17/00	2000009	24.92473	-80.51500
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5/17/00	2000011	24.92470	-80.51502
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5/17/00	2000013	24.92463	-80.51498
5/17/00	2000015	24.92468	-80.51502
5/17/00	2000016	24.92467	-80.51505
5/17/00	2000017	24.92465	-80.51500
5/17/00	2000018	24.92457	-80.51508
5/27/00	2000019	24.92452	-80.51487
5/27/00	2000020	24.92452	-80.51498
5/27/00	2000021	24.92452	-80.51493
5/27/00	2000022	24.92452	-80.51492
5/27/00	2000023	24.92452	-80.51495
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5/27/00	2000025	24.92445	-80.51492

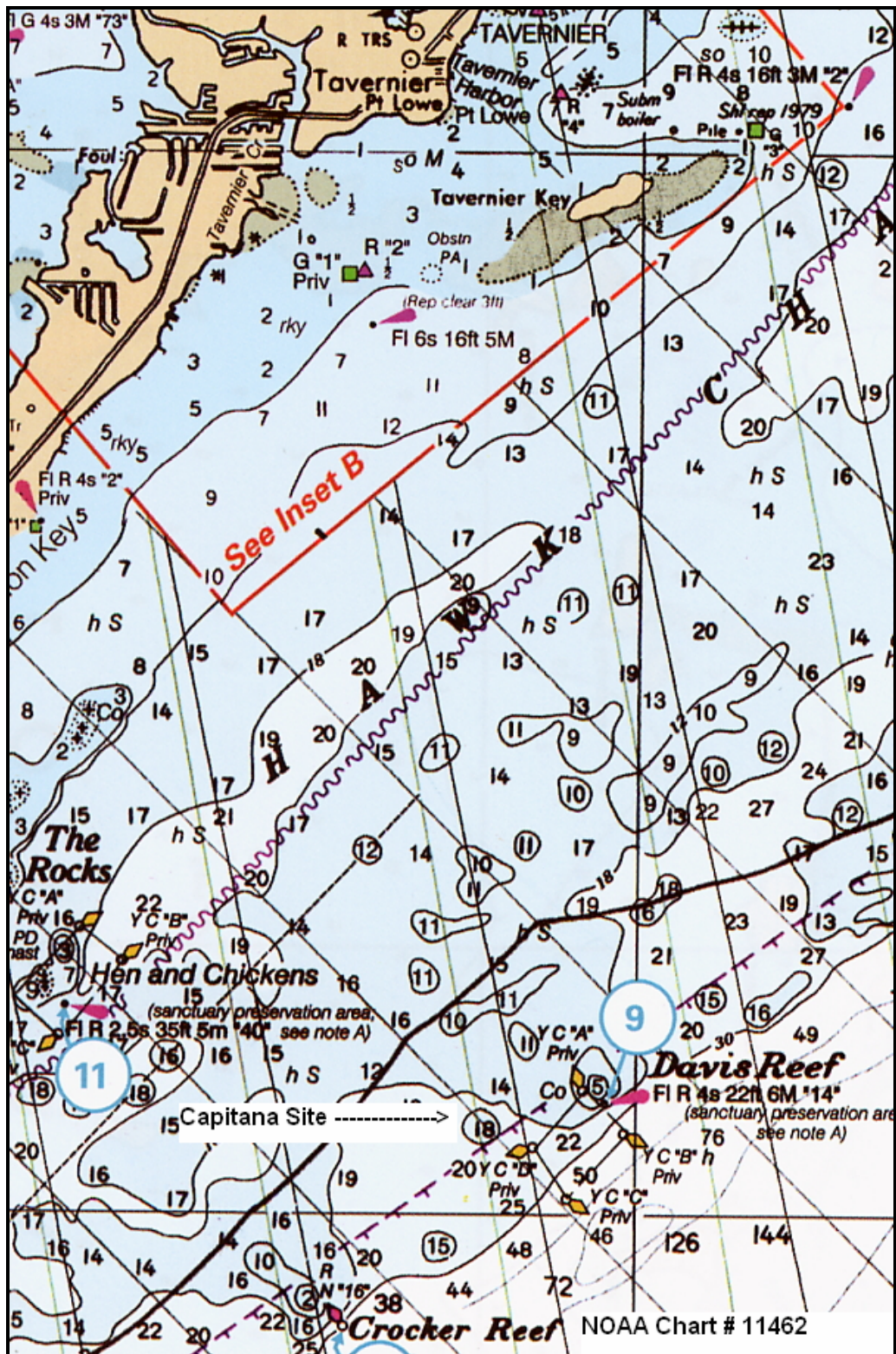
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5/28/00	2000030	24.92457	-80.51490
5/28/00	2000031	24.92462	-80.51492
5/28/00	2000032	24.92457	-80.51490
5/28/00	2000033	24.92455	-80.51485
5/29/00	2000034	24.92460	-80.51497
5/31/00	2000035	24.92460	-80.51497
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6/1/00	2000037	24.92467	-80.51490
6/1/00	2000038	24.92468	-80.51490
6/1/00	2000039	24.92470	-80.51492
6/1/00	2000040	24.92472	-80.51490
6/1/00	2000041	24.92473	-80.51492
6/2/00	2000042	24.92460	-80.51483
6/2/00	2000043	24.92460	-80.51482
6/2/00	2000044	24.92462	-80.51483
6/2/00	2000045	24.92460	-80.51483
6/2/00	2000046	24.92460	-80.51482
6/4/00	2000047	24.92442	-80.51472
6/4/00	2000048	24.92443	-80.51472
6/4/00	2000049	24.92442	-80.51470
6/20/00	2000050	24.92452	-80.51460
6/20/00	2000051	24.92452	-80.51462
6/20/00	2000052	24.92452	-80.51463
6/20/00	2000053	24.92453	-80.51465
6/20/00	2000054	24.92455	-80.51467
6/20/00	2000055	24.92457	-80.51467
6/21/00	2000056	24.92447	-80.51472
6/21/00	2000057	24.92445	-80.51473
6/21/00	2000058	24.92447	-80.51477
6/21/00	2000059	24.92447	-80.51475
6/21/00	2000060	24.92448	-80.51475
6/21/00	2000061	24.92448	-80.51473
7/12/00	2000062	24.92442	-80.51468
7/12/00	2000063	24.92442	-80.51467
7/12/00	2000064	24.92442	-80.51468
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7/12/00	2000067	24.92443	-80.51473
7/12/00	2000068	24.92443	-80.51472
7/12/00	2000069	24.92443	-80.51473
7/13/00	2000070	24.92442	-80.51482
7/14/00	2000071	24.92440	-80.51488
7/14/00	2000072	24.92442	-80.51488
7/14/00	2000073	24.92443	-80.51488
7/14/00	2000074	24.92445	-80.51488
7/14/00	2000075	24.92443	-80.51490

Date	Hole	DecLat	Negddlong
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7/14/00	2000079	24.92442	-80.51482
7/14/00	2000080	24.92442	-80.51480
7/14/00	2000081	24.92442	-80.51478
7/14/00	2000082	24.92443	-80.51477
8/19/00	2000083	24.92457	-80.51508
8/19/00	2000084	24.92457	-80.51505
8/19/00	2000085	24.92458	-80.51507
8/19/00	2000086	24.92460	-80.51507
8/19/00	2000087	24.92460	-80.51508
8/20/00	2000088	24.92460	-80.51508
8/20/00	2000089	24.92462	-80.51510
8/20/00	2000090	24.92463	-80.51508
8/20/00	2000091	24.92463	-80.51510
8/20/00	2000092	24.92465	-80.51515
8/20/00	2000093	24.92465	-80.51513
8/20/00	2000094	24.92465	-80.51515
8/23/00	2000095	24.92462	-80.51508
8/29/00	2000095	24.92462	-80.51508
6/21/00	2000096	24.92528	-80.51540
6/22/00	2000097	24.92507	-80.51558
6/22/00	2000098	24.92523	-80.51567
6/22/00	2000099	24.92495	-80.51555
6/22/00	2000100	24.92502	-80.51547
6/29/00	2000101	24.92458	-80.51548
6/29/00	2000102	24.92450	-80.51530
7/3/00	2000103	24.92450	-80.51530
7/5/00	2000104	24.92482	-80.51500
7/5/00	2000105	24.92492	-80.51550
7/5/00	2000106	24.92502	-80.51565
7/5/00	2000107	24.92500	-80.51600
7/5/00	2000108	24.92532	-80.51640
7/7/00	2000109	24.92518	-80.51605
7/7/00	2000110	24.92520	-80.51607
7/7/00	2000111	24.92523	-80.51613
7/7/00	2000112	24.92530	-80.51615
7/7/00	2000113	24.92530	-80.51620
7/7/00	2000114	24.92532	-80.51612
7/7/00	2000115	24.92533	-80.51615
7/7/00	2000116	24.92537	-80.51618
7/7/00	2000117	24.92540	-80.51617
7/7/00	2000118	24.92538	-80.51610
7/11/00	2000119	24.92482	-80.51562
7/11/00	2000120	24.92480	-80.51560
7/11/00	2000121	24.92480	-80.51553
7/11/00	2000122	24.92475	-80.51552
7/11/00	2000123	24.92477	-80.51548
7/11/00	2000124	24.92472	-80.51542

Date	Hole	DecLat	Negddlong
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7/11/00	2000127	24.92495	-80.51542
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7/11/00	2000129	24.92513	-80.51550
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7/11/00	2000131	24.92517	-80.51553
7/11/00	2000132	24.92517	-80.51557
7/11/00	2000133	24.92502	-80.51557
7/11/00	2000134	24.92498	-80.51563
7/12/00	2000135	24.92550	-80.51587
7/12/00	2000136	24.92552	-80.51595
7/12/00	2000137	24.92553	-80.51590
7/12/00	2000138	24.92555	-80.51580
7/12/00	2000139	24.92567	-80.51587
7/12/00	2000140	24.92572	-80.51572
7/12/00	2000141	24.92580	-80.51575
7/12/00	2000142	24.92592	-80.51568
7/13/00	2000143	24.92513	-80.51620
7/13/00	2000144	24.92513	-80.51625
7/13/00	2000145	24.92515	-80.51623
7/13/00	2000146	24.92517	-80.51625
7/13/00	2000147	24.92515	-80.51628
7/13/00	2000148	24.92515	-80.51630
7/13/00	2000149	24.92517	-80.51625
7/13/00	2000150	24.92525	-80.51628
7/13/00	2000151	24.92522	-80.51627
7/13/00	2000152	24.92530	-80.51625
7/13/00	2000153	24.92525	-80.51635
7/13/00	2000154	24.92527	-80.51635
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7/28/00	2000159	24.92512	-80.51588
7/28/00	2000160	24.92507	-80.51593
7/28/00	2000161	24.92518	-80.51588
7/28/00	2000162	24.92517	-80.51597
7/28/00	2000163	24.92512	-80.51600
7/28/00	2000164	24.92507	-80.51602
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7/28/00	2000166	24.92498	-80.51608
7/28/00	2000167	24.92498	-80.51612
7/28/00	2000168	24.92495	-80.51613
7/28/00	2000169	24.92498	-80.51610
7/28/00	2000170	24.92497	-80.51613
7/28/00	2000171	24.92495	-80.51617
7/28/00	2000172	24.92492	-80.51617
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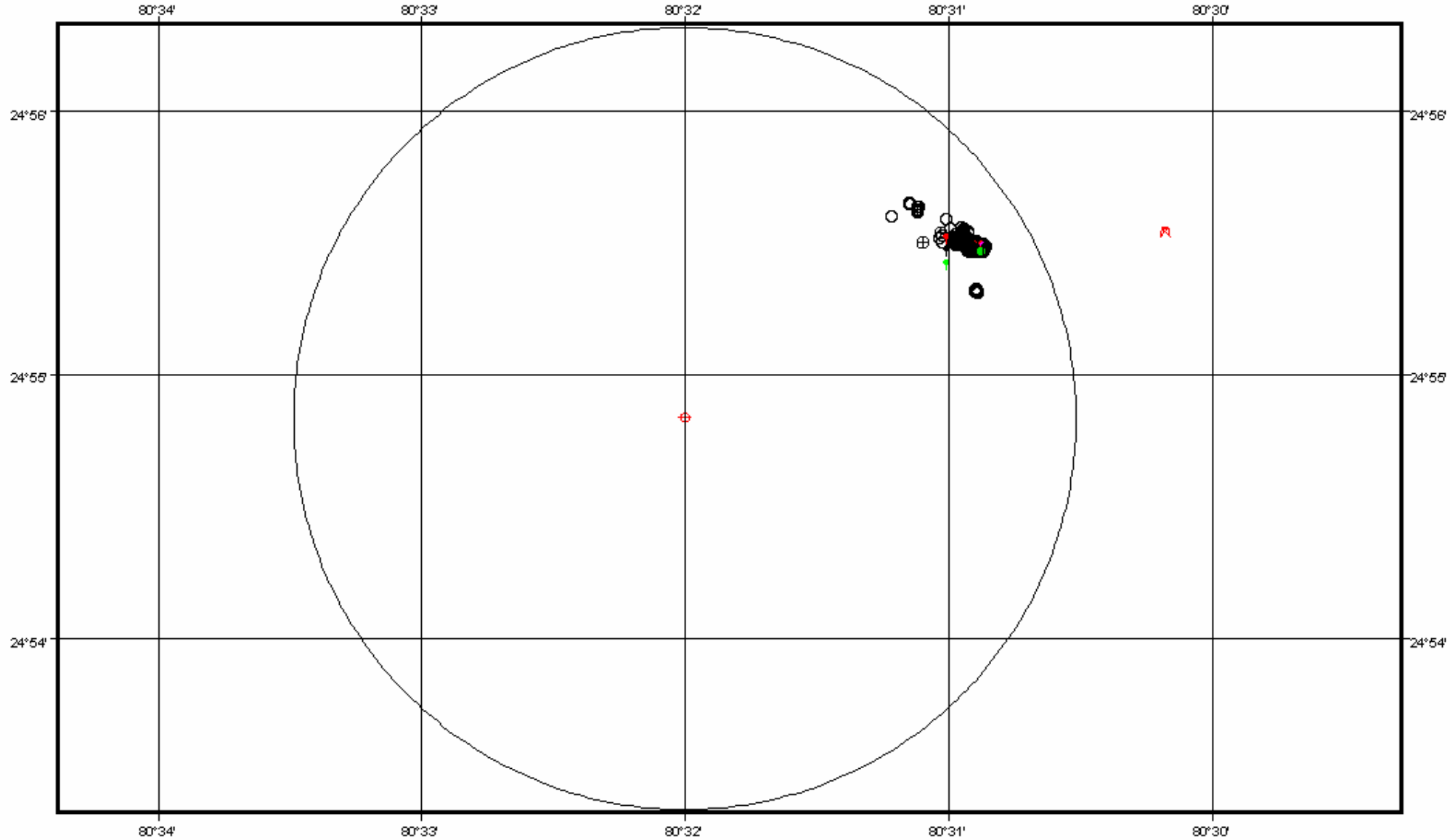
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7/19/01	2001001	24.92460	-80.51443
7/19/01	2001002	24.92502	-80.51488
7/20/01	2001003	24.92590	-80.51657
7/21/01	2001004	24.92665	-80.52022
7/21/01	2001005	24.92482	-80.51430
8/10/01	2001006	24.92523	-80.51572
8/10/01	2001007	24.92527	-80.51573
8/10/01	2001008	24.92527	-80.51577
8/10/01	2001009	24.92528	-80.51575
8/10/01	2001010	24.92525	-80.51578
8/10/01	2001011	24.92530	-80.51580
8/10/01	2001012	24.92530	-80.51583
8/10/01	2001013	24.92518	-80.51582
8/17/01	2001014	24.92468	-80.51512
8/17/01	2001015	24.92467	-80.51508
8/17/01	2001016	24.92468	-80.51503
8/17/01	2001017	24.92473	-80.51498
8/17/01	2001018	24.92475	-80.51495
8/17/01	2001019	24.92468	-80.51493
8/18/01	2001020	24.92462	-80.51497
8/18/01	2001021	24.92460	-80.51492
8/18/01	2001022	24.92457	-80.51497
8/18/01	2001023	24.92452	-80.51502
8/18/01	2001024	24.92452	-80.51505
8/18/01	2001025	24.92450	-80.51502
8/18/01	2001026	24.92448	-80.51498
8/18/01	2001027	24.92443	-80.51503
8/18/01	2001028	24.92447	-80.51495
8/18/01	2001029	24.92450	-80.51493
8/18/01	2001030	24.92450	-80.51498
8/19/01	2001031	24.92470	-80.51525
8/19/01	2001032	24.92467	-80.51523
8/19/01	2001033	24.92465	-80.51520
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9/1/01	2001035	24.92452	-80.51512
9/1/01	2001036	24.92455	-80.51508
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10/5/01	2001038	24.92453	-80.51540
10/5/01	2001039	24.92455	-80.51537
10/5/01	2001040	24.92455	-80.51533
10/5/01	2001041	24.92455	-80.51530
10/5/01	2001042	24.92457	-80.51527
10/5/01	2001043	24.92453	-80.51523
10/5/01	2001044	24.92457	-80.51523
10/5/01	2001045	24.92455	-80.51520
10/5/01	2001046	24.92457	-80.51517
10/5/01	2001047	24.92455	-80.51513

Date	Hole	DecLat	Negddlong
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10/6/01	2001051	24.92563	-80.51537
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10/6/01	2001053	24.92445	-80.51517
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10/6/01	2001055	24.92443	-80.51513
10/6/01	2001056	24.92443	-80.51512
10/6/01	2001057	24.92445	-80.51507
10/6/01	2001058	24.92448	-80.51503
8/27/01	2001059	24.92567	-80.51712
8/27/01	2001060	24.92508	-80.51828
10/7/01	2001061	24.92747	-80.51907
10/7/01	2001062	24.92745	-80.51910
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MAP 1

CAPITANA PROJECT ADMIRALTY AREA □ MAP # 02



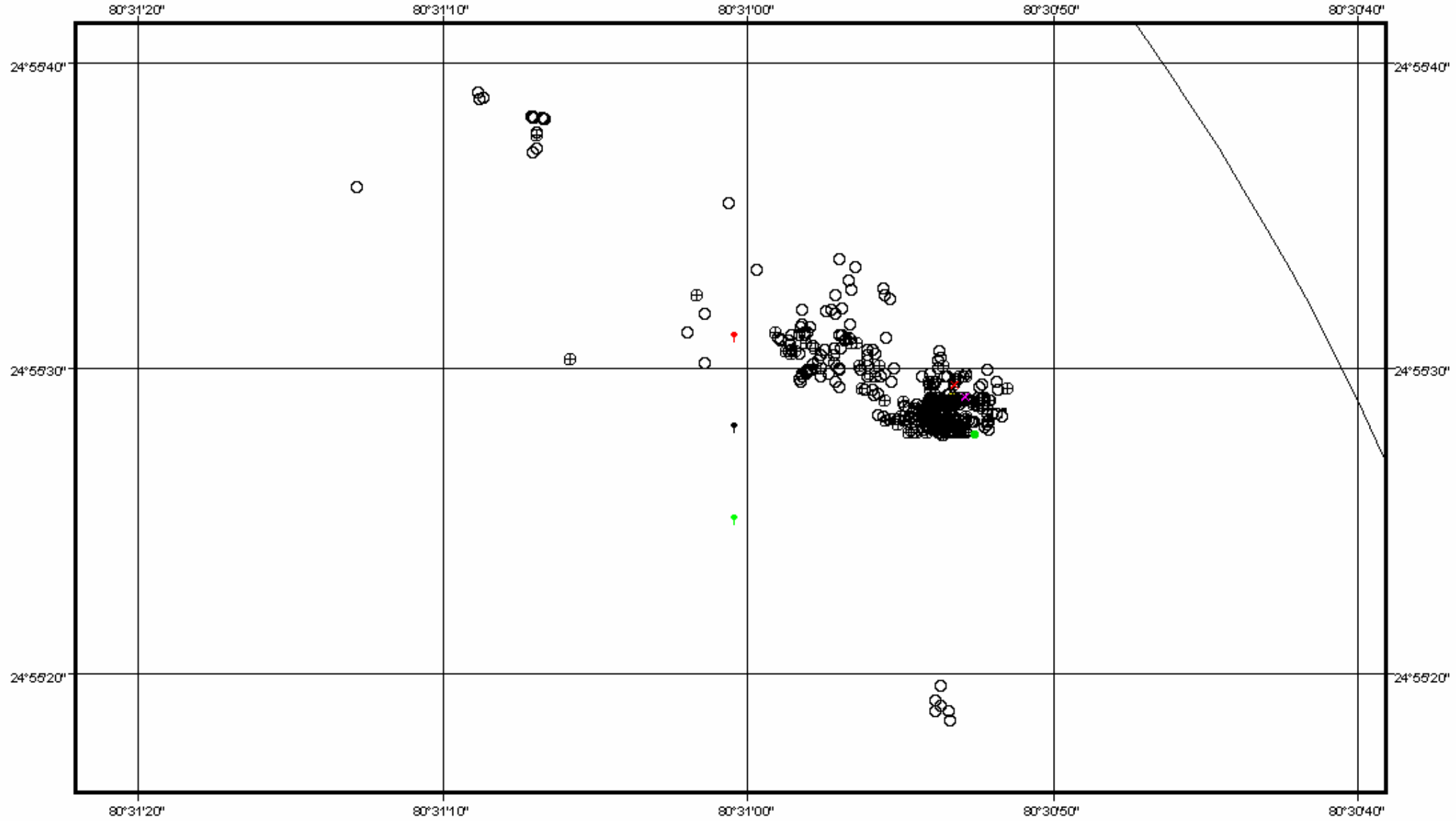
DATUM

- ⬮ Black
- ⊕ Center
- ⚓ Davis
- Green
- ⬮ Middle
- ⬮ North
- × R/W
- ⬮ South
- × UW
- White

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CAPITANA PROJECT EXCAVATION AREA

MAP # 03



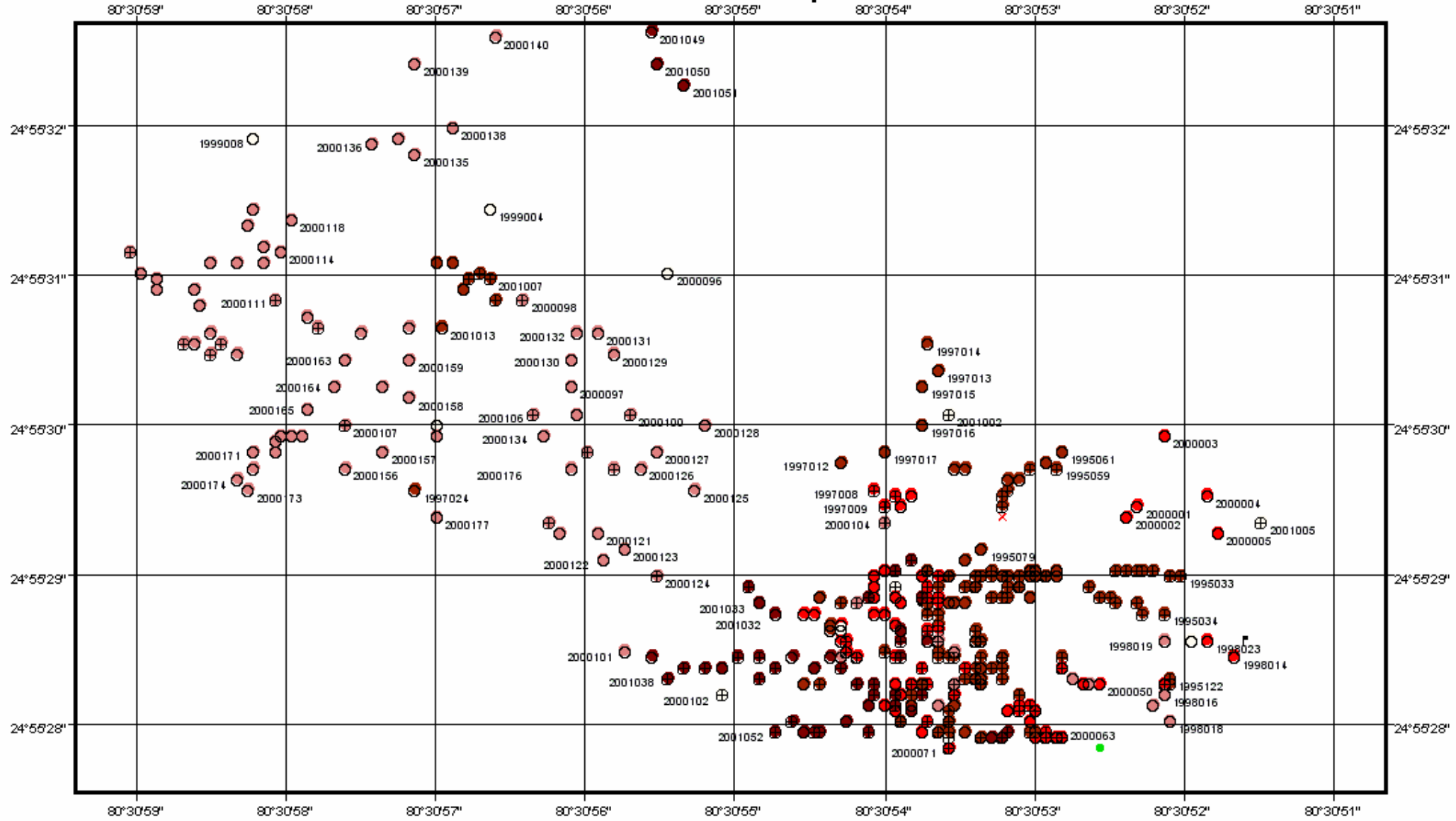
- DATUM
- Black
 - ⊕ Center
 - ▣ Davis
 - Green
 - ▣ Middle
 - ▣ North
 - ⊗ R/W
 - ▣ South
 - ⊗ UW
 - White



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CAPITANA PROJECT Main Ballast Area Recovered Depth

MAP # 05

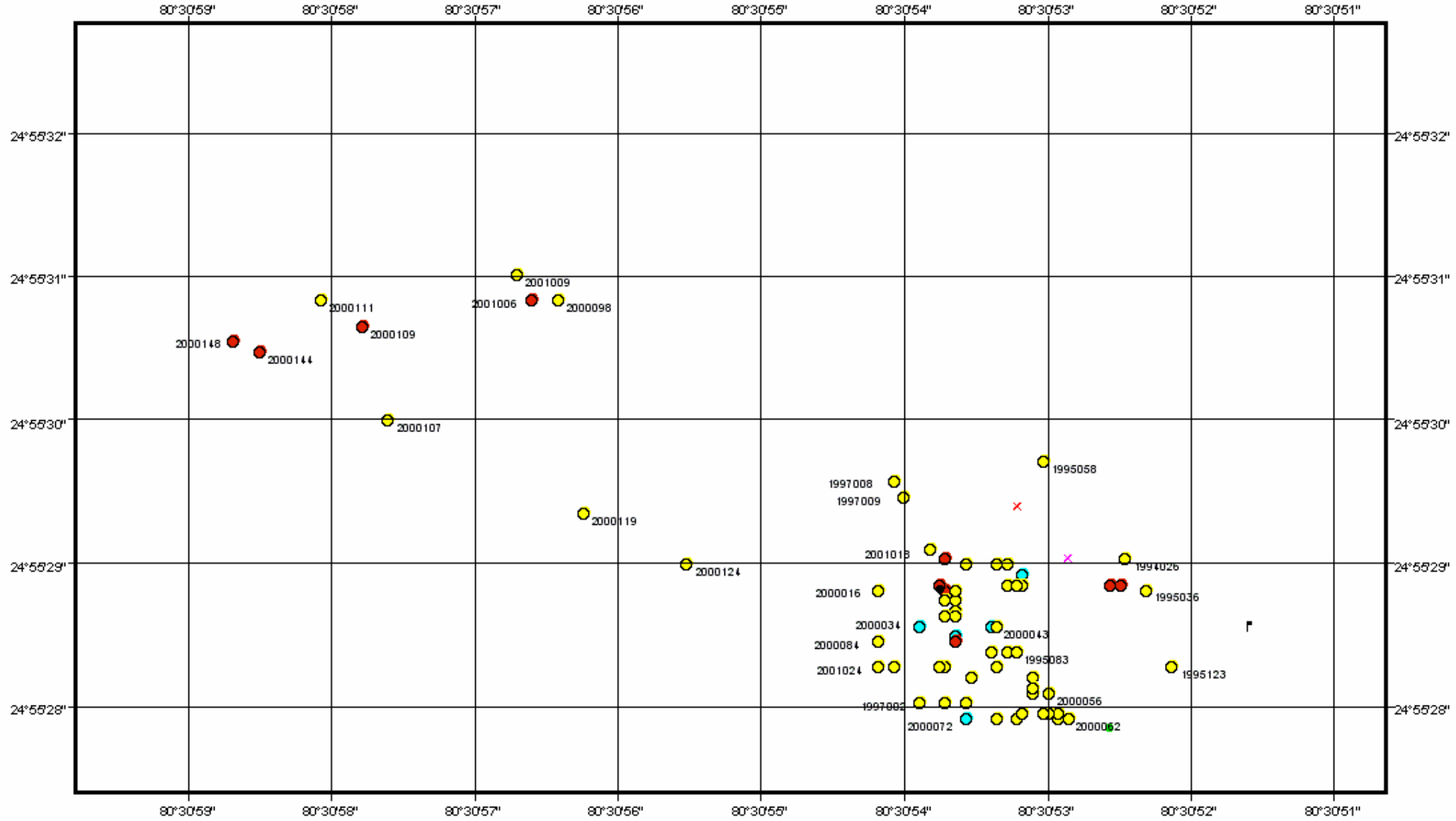


- Holes
- ⊕ Artifacts
- Empty
- Recovered Depth
- 0.5 - 2
- 2 - 4
- 4 - 6.5
- 6.5 - 9
- 9 - 14
- DATUM
- ⊕ Black
- ⊕ Center
- ⊕ Davis
- Green
- ⊕ Middle
- ⊕ North
- ⊕ RW
- ⊕ South
- ⊕ UW
- White



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CAPITANA PROJECT Main Ballast Area Ceramics MAP # 07

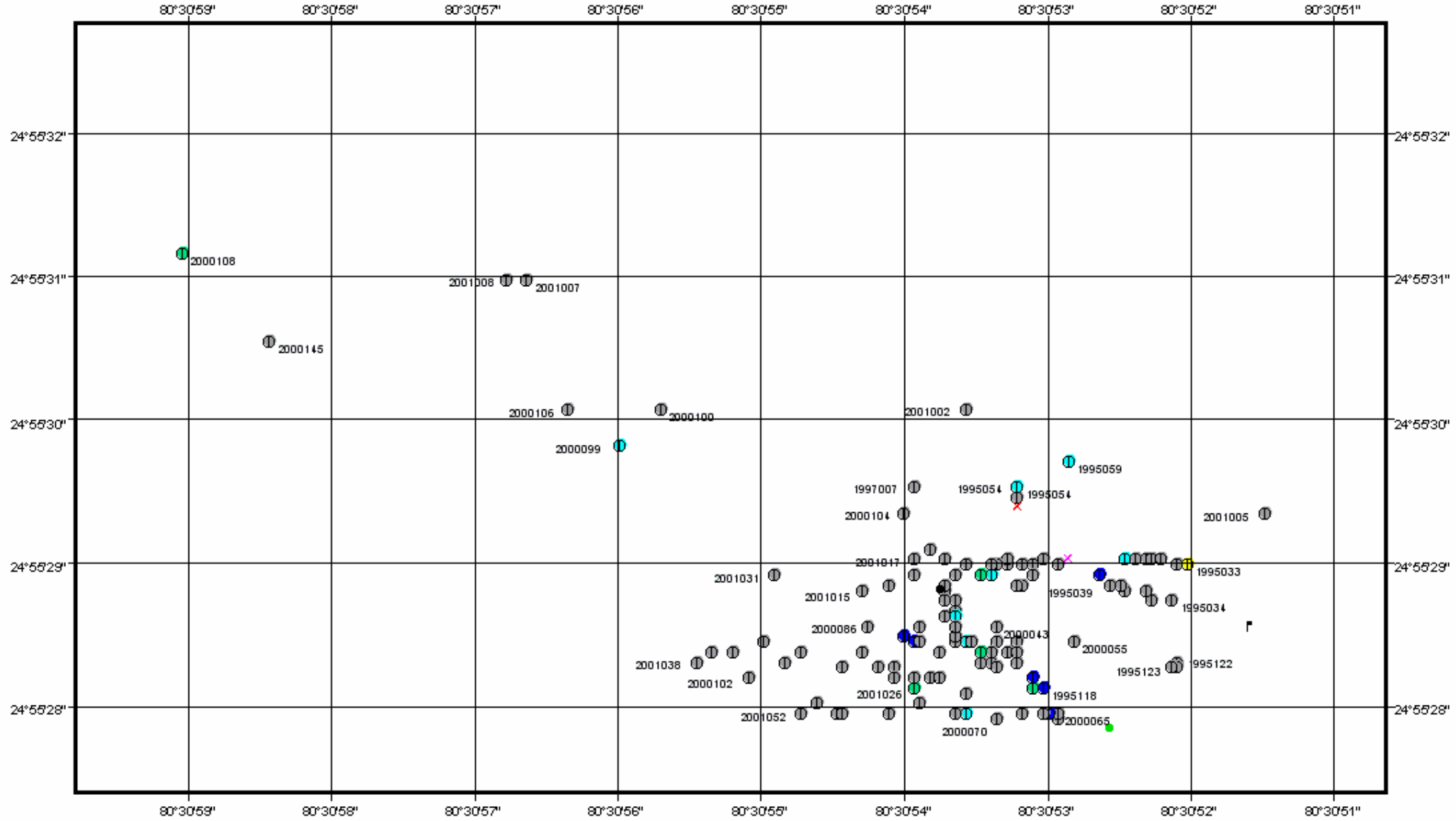


- DATUM**
- █ Black
 - ⊕ Center
 - ⊠ Davis
 - Green
 - ⬇ Middle
 - ⬆ North
 - × R/W
 - ⬆ South
 - × UW
 - White
- Ceramics**
- brick
 - porcelain
 - pottery



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CAPITANA PROJECT Main Ballast Area Metal MAP # 09

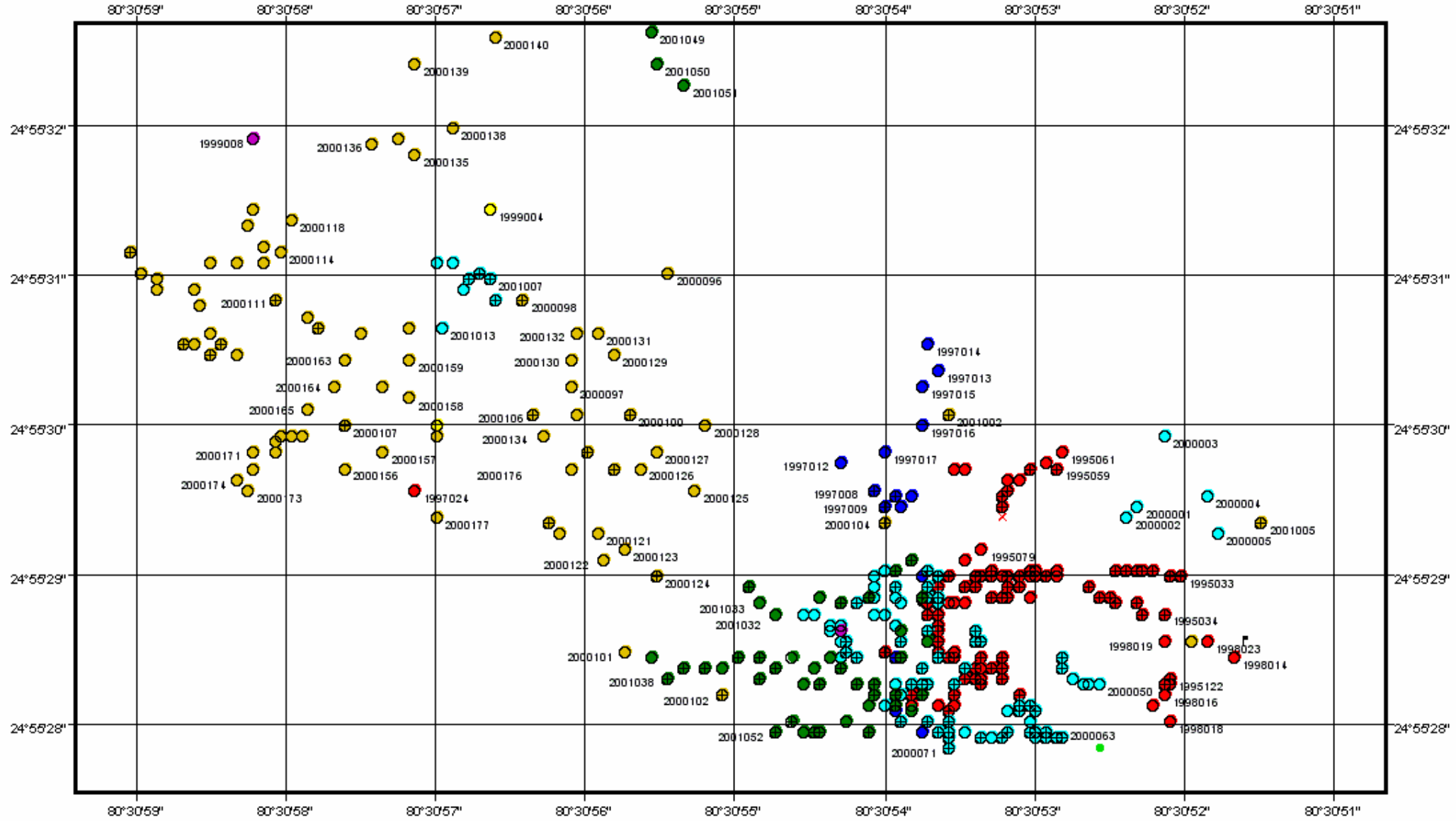


- DATUM**
- ⌚ Black
 - ⊕ Center
 - ⚓ Davis
 - Green
 - ⬇ Middle
 - ⬆ North
 - × R/W
 - ⬆ South
 - × UW
 - White
- Metal**
- copper alloy
 - gold
 - iron
 - lead
 - pewter
 - silver



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CAPITANA PROJECT Main Ballast Area Vessel MAP # 10



- Holes**
- ⊕ Artifacts
 - Empty
- Vessel**
- Ace in the Hol
 - C-ARK
 - Deep Venture
 - Ella Warley II
 - Genie
 - J&J's Lady
 - Sea Ventures
 - Treasure Quest
- DATUM**
- ⬮ Black
 - ⊕ Center
 - ⊗ Davis
 - Green
 - ⬮ Middle
 - ⬮ North
 - ⊗ RAW
 - ⬮ South
 - ⊗ UW
 - White



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THE CAPITANA PROJECT
ARTIFACT CONSERVATION REPORT
The shipwreck believed to be *La Capitana el Rubí*.
FKNMS-25-93
FKNMS(UR)-35-96
FKNMS(UR)-104-98
Caribbean Shipwreck Research Institute, Inc.
Edited by Robert J Benson

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Artifact Stabilization Procedures

After recovery, all materials are stored by complete immersion in salt water. Artifacts should be monitored to insure that they do not dry out before transportation to the conservation laboratory. Similar materials should be stored together separated from dissimilar materials to avoid galvanic coupling. Fresh water should be introduced incrementally to replace saltwater for those artifacts that will not be subjected to chemical composition analysis. Algaecides can be used to control biological growths during long periods of storage before conservation. The use of algaecides should be avoided in cases where an artifact will be subjected to chemical composition analysis.

The long-term storage of concreted iron artifacts can be complicated. The concretion layer next to the artifact will be acidic causing the un-corroded iron to oxidize. Storing the iron artifacts in a basic solution of at least pH 8, however, can inhibit further corrosion, though the concretion layers are relatively impermeable to the basic solution and the metal will continue to corrode as long as they are concreted. (Rodgers, 1992)

General Conservation Procedures

Electrolytic reduction (ELR) is the most practical and cost effective method to remove ferrous chlorides from iron recovered from a marine environment. ELR is also applicable to copper alloyed material, silver, lead, and pewter. Using a regulated DC power supply, an electrical current is passed from a positive charged anode through an electrolyte solution to a negative charged cathode/artifact. Oxidation takes place at the anode and oxygen is evolved. Reduction takes place at the cathode and hydrogen is evolved while some of the positive charged metal ions in the form of compounds in the artifact are reduced to a metallic state in situ. Negative charged chloride ions are removed from the cathode and migrate towards the positive charges anode by electrolytic attraction (Hamilton, 1996).

Iron artifacts will have any concretions removed by mechanical and/or chemical techniques. The presence of chlorides within the iron is what causes further deterioration if the iron is allowed to dry out. Chloride removal will be accomplished utilizing ELR with a sodium hydroxide electrolyte solution. The amount of chlorides removed will be determined by analytical sampling and graphing the results. After it has been deemed that chloride levels have been removed to an acceptable level, the electrolyte present within the metal will be removed by a final reduction in non-chlorinated water without an electrolyte solution. The metal will be chemically primed and allowed to sit for approximately two weeks to check for signs of corrosion. The metal will then be coated with polyurethane and/or other protective coating dependent upon the environment in which the artifact will be stored to protect it from outside elements that may further cause corrosion.

Silver artifacts will have any concretions removed mechanically and/or chemically. Chloride removal will be accomplished utilizing ELR with a sodium hydroxide electrolyte solution. The amount of chlorides removed will be determined by analytical sampling and graphing the results. After it has been deemed that chloride levels have been removed to an acceptable level, the electrolyte present within the metal will be removed by a final reduction in non-chlorinated water without an electrolyte solution followed by a final wash with non-chlorinated water. The artifact may be polished as necessary to remove any undesirable patina present after the final wash.

Copper alloyed artifacts will have any concretions removed by mechanical and/or chemical techniques. Chloride removal will be accomplished utilizing ELR with a sodium carbonate

electrolyte solution and/or sodium sesquicarbonate simple wash. The amount of chlorides removed will be determined by analytical sampling and graphing the results. After it has been determined that chloride levels have been removed to an acceptable level, the electrolyte or wash chemicals present in the metal will be removed by a final reduction in non-chlorinated water without an electrolyte solution and/or mechanical washing. The metal will be dried using hot air and/or methylated spirits and then treated with benzotriazole to help prevent further corrosion. The metal will receive a final coating of clear lacquer.

Lead and pewter will have any concretions removed by mechanical and/or chemical means as deemed necessary. Dependent upon the piece in question there is the option of using ELR to reduce any remaining corrosion layer back to a metallic state. Some pieces may only require mechanical washing to remove dissolved salts within the metal.

Ceramics, stoneware, glass, lithics, and bone are initially treated in a similar fashion in that the dissolved salts must be washed from the material. Dependent upon the piece in question, the artifact may be saturated and/or coated with a consolidating product such as polyvinyl acetate. Ballast rocks will be minimally washed to remove surface salts and will not be subjected to consolidation products. Ballast samples will be retained for typological classification and petrographic analysis.

There are many methods in which wood can be conserved with varying results. The main problem associated with wood is that the cellular construction that gives support for the structure of the wood has disintegrated and the space is now filled with seawater. The wood must first be rinsed until the salt content is reduced to an acceptable level. The conservation process of treating wood strengthens partially degraded cell walls by replacing water within the wood with a substance that will lessen the capillary tension pressure exerted on the cell walls as the wood is dried. Regardless of what type of treatment is chosen the water within the wood is replaced by an inert substance referred to as a 'bulking agent'. The most common bulking agents used are various molecular weights of polyethylene glycol and several varieties of sugar. The molecular weight of a bulking agent will determine the agent's ability to penetrate the cell walls

Other types of composition or multi-composite artifacts will be treated respectively as required using a compilation of currently acceptable conservation practices.

See Appendix 10 for artifact list.

Caribbean Shipwreck Research Institute
 Cost Analysis for the Conservation of Saltwater Recovered Artifacts
 (Benson, 1997)

Artifacts from the 1733 fleet and Iron Mast Wreck (IMW) (1911 Star of the Sea) were used in this study to determine the approximate cost required to conserve an artifact recovered from a salt water marine environment. All the artifacts used in the study were of wrought iron composition and had approximately the same thickness of incrustation present. All artifacts were of an acceptable density factor to be treated at the same time together. Mechanical and chemical means were employed in the removal of the encrustation layer. Electrolytic reduction was used for chloride removal from the artifact. Chloride levels were determined using a combination of the Mercuric Nitrate titration test and by titration tabs. Finished artifacts were treated with tannic acid solution, allowed to dehydrate, retreated with tannic acid solution, allowed to dehydrate, and then coated with clear polyurethane. This is with the exception of artifact # 1316A which was treated with 'Extend' instead of tannic acid solution to compare results with its identical mate of #1316B. Completion time took 13 months.

The following artifacts were used for the study; #1316A,B draw pulls IMW, #1386A, B, C hooks 1733, #1314A, B, C, D hull scrapers 1733, #1800 cargo hook 1733, #1801 spike 1733, #1802 large spike/barbs, #1804 door hinge 1733, #1407 nail eye 1733. This is a total of 14 artifacts.

The artifacts went through a total of six chemical electrolytic reduction baths with two water wash changes. (see Table 1 and Figure 1)

Sodium hydroxide	357.00
Muriatic acid	5.00
Titration	39.00
Photographs	34.00
Tannic acid solution	25.00
Clear polyurethane	6.00
Misc. Supplies and hardware	15.00
TOTAL	\$481.00

This estimate does not take into account the cost of the following; electric, water, rent on the facilities, and equipment depreciation. Labor was neither included.

With regards to the above statement, each artifact cost \$34.36 to conserve in 1997 dollars. All the above artifacts were deemed acceptable after treatment with the exception of #1386B which will need to be retreated as it is showing signs of further degradation.

Conservation records for the following artifacts: 1314B, 1316B, 1407, and 1802
 All artifacts are of wrought iron construction manufactured in the 18th and 19th centuries.

DATE	PH	VDC	ADC	% NaOH	PPM Cl ⁻	NOTES
02-11-95	12	3	3.0	4	--	Start ELR
04-05-95	12	3	3.0	--	767	
05-13-95	12	3	3.0	4	794	Change solution
06-17-95	12	3	3.0	--	335	
06-19-95	--	--	--	--	--	Tank breech
11-05-95	12	3	3.0	4	--	Restart ELR
12-03-95	12	2.7	3.5	--	213	
02-12-96	12	2.7	3.5	--	234	
03-18-96	12	2.7	3.5	2	273	Change solution
04-06-96	12	2.7	3.5	2	113	Change solution Install circulation pump
05-02-96	12	2.7	3.5	2	78	Change solution
07-07-96	14	3.4	2.0	2	57	Change solution
07-12-96	14	2.9	2.1	--	<30	
07-28-96	14	2.9	2.1	--	<30	Remove from electrolyte
08-03-96	--	36.0	2.0	--	--	Electrolyte removal
08-10-96	N	--	--	--	--	Final rinse, tannic acid preparation, Dehydration, coat with clear polyurethane

Table 1

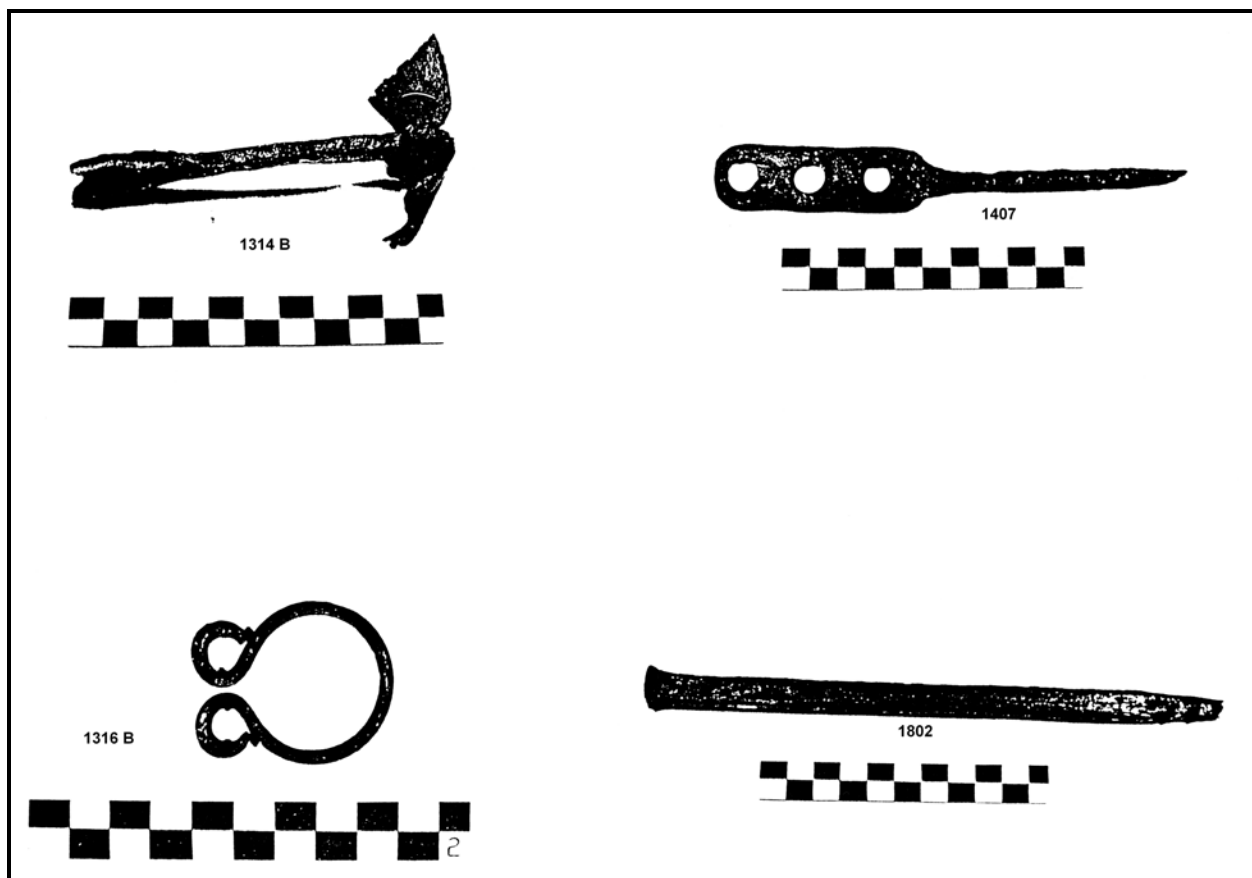


Figure 1. A selection of artifacts utilized in conservation cost analysis study.

Limited Recovery Principle

Since both the State of Florida as well as the Maritime Museum of the Florida Keys has many examples relative to eighteenth century iron fasteners and hardware the project principles felt that additional recoveries do not add to the present archaeological record. The idea of limited recovery of cultural material is not new to archaeology, as it is in current practice on the *Pilar Project* in Guam, USA, and a topic of current cultural resource management discussion in the United States as well as abroad. All located iron fasteners and related hardware which are not recovered are recorded as to type and location and reburied in the approximate area of recovery. Recordation includes tagging the said such artifacts and recordation on the same type of tracking sheet used for timbers.(see Figure 2) This is not to say that no iron items are recovered. Iron items which do not fit the category of being common are recovered for diagnostic and study purposes. (Benson, 1997)

Caribbean Shipwreck Research Institute Artifact Tracking Form

NON-RECOVERED ARTIFACTS

TAG # 320 DATE RECOVERED 06/03/97 LOCATION # 121
SITE NAME CAPITANA EXCAVATOR J+J's / Joe Kimbell
MATERIAL COMPOSITION WOOD
MATERIAL DESCRIPTION ceiling timber?
PHOTOGRAPH [] NONE
COMMENTS: Length goes further under sand.
No other wood in area

Location Depth 6' Water Depth 18'
Measurements for Wood:
Length 10' 6" → Width 12" Thickness 2"
Compass direction → 47°

DRAWING

RJB 05 / 13 / 97

Figure 2. Example of a non-recovered artifact form utilized to record non-recovered iron fasteners and ship timbers.

Conservation of a 1733 Flintlock Pistol a Composite Artifact
Artifact number 481
By Douglas R. Armstrong (2001)

One of the more interesting artifacts recovered from remains of an ill-fated galleon that met its demise in the Florida keys during the summer of 1733 is a well preserved flintlock pistol. The artifact was found by a veteran salvage team led by Robert Weller during the 2000 salvage season and subsequently brought to my laboratory for conservation. (see Figure 1)



Figure 1

The piece was closely examined to determine what, if anything could be salvaged from a rather unassuming mass of sea rock, gun parts, and other debris. It was soon discovered that the pommel and most of the grip section had been torn from the weapon during the original shipwreck. The trigger guard was also missing. No x-rays were available to peer within the conglomerate, however there was a strong magnetic attraction in the area of the breech plug and lock assembly. This is usually a good indication of solid iron hidden under a coral exterior. The question was how much iron?

One of the most difficult decisions a conservator has to make when working with encrusted objects is whether to attempt saving unknown internal parts, only a rock exterior, or both. Wood is usually considered only if little or no encrustation is present on the object. This is because the safe method of separating wood from solid rock is by immersion of the whole thing in an acid bath to dissolve carbonates that are tightly bonded to soft underlying wood. For the average pistol found as a separate encrusted object on most shipwrecks, I personally prefer to preserve the original rock and not take a chance of finding little remaining wood. In such cases one could

end up with only a few bits and pieces and lose everything else, including what was usually a beautiful exterior encrustation around the original artifact.

In the case of this pistol, a decision was made to release the rock to extract any remaining iron and then reassemble the pieces to restore a stable original rock replica of the shipwrecked weapon. At least that was the primary plan. As a precaution before any attempt at opening the piece was started, a mold was made of the whole lock area. This would ensure accurate replication with lab-created sea rock in case the delicate encrustation around the cock and frizzen was lost during extraction of corroded metallic remains. After the mold rubber had been removed and set aside, a one-inch high speed diamond saw was used to cut razor thin slots along the edges of the more prominent parts of the lock and along the length of the gun. At this point I noticed there was an unusual amount of solid metal just under the surface of the whole lock area. In all of the years that I have been working with sea salvaged pistols, I have never encountered one that had any appreciable amount of iron left, and the thought that a lock might be in good condition was unimaginable. I was certainly in for a pleasant surprise!

As more and more encrustation split away with the aid of an air scribe set to a gentle high frequency mode, it soon became apparent the lock was in near perfect condition. Cutting and chipping continued until the whole outside of the mechanism was exposed. Photos were made of the lock as work continued. Careful cuts were then made along the outer edges of the lock plate until the entire assembly could be pulled out of the gun stock. To my amazement, not only were the lock's exterior parts in good condition, but the interior mechanism appeared to be well preserved as well. Further probing revealed that the breech plug and about four inches of the barrel's aft end also remained as solid metal. This was removed for further conservation. After more photos were made, all of the iron parts were set aside in sodium carbonate water to keep them stable while the rest of the encrustation was opened to search for any remaining metal.

A few splinters of iron were encountered along the barrel and in the areas where the tube had been fastened to the stock with iron pins. A little was also found at the base of the belt hook on the left side of the gun. These were removed and discarded. Another surprise awaited me at the muzzle end. Here I found that the stock end cap and the ramrod forward thimble were both made of brass and remained in excellent condition. The aft thimble is also brass, but did not survive well enough to leave it exposed after conservation. In this case the surrounding rock is more valuable as an original part of the whole artifact than only a little remaining metal. The next step was to clean each piece of broken rock in the bead machine and then wash them in water to remove surface salts. The whole weapon had been soaked in sodium-carbonate water for several months prior to conservation; so much of the offending chlorides had already been removed. While no amount of washing can completely leach all salt from naturally formed sea rock that which might cause the encrustation to crumble can be soaked out in water baths. The pieces were then oven dried at 180° F. for two hours and set aside to await future assembly. Now the lock and barrel were addressed. Both were immersed in a 33% solution of hydrochloric acid for six hours to dissolve remaining rust, neutralized in carbonate water, and then oven dried. More photos were made. The barrel was then put through the glass bead machine to remove all corrosion and leave a bright surface before it was wired for electrolytic reduction in a standard sodium-carbonate solution.

Next, the lock was carefully cleaned with the glass bead gun to remove remaining corrosion and to free up moving parts. After heading, the mechanism was completely disassembled, and it was noted that all of the original parts were intact with the exception of some screw head

corrosion damage. Only the threaded stubs of the main lock plate attachment screws, trigger spring retaining screw, frizzen spring retaining screw, and the cock screw remained. These were easily extracted to reveal well preserved screw holes. The trigger itself was missing, probably lost along with the pommel, grip section, and trigger guard when the galleon was wrecked.

No markings were found on the lock plate or barrel; however the weapon appears to be either English in origin, or a copy of their style. The lock is an unbridled mechanism with workmanship about typical for common military hardware of that era. Some repairs had been made to the lock plate where at least one screw hole is filled with a screw stub that is filed flat. This is most likely a correction for a misplaced hole, probably during original manufacture. The best craftsmanship was reserved for the springs. They are well-made of good steel and remain fully "live", a tribute to the gunsmith.

Each part was then carefully cleaned with the glass bead gun and wired for the electrolysis bath. When all was ready, the lock parts and the previously prepared barrel section were put in the first bath. The barrel and lock parts would run in a series of DC-driven reduction baths for a total of ninety days. While the iron was undergoing chloride removal, attention was again turned to the jigsaw puzzle of sea rock pieces. At this point everything could be put back together except for the lock cavity area. This would be left open for eventual reinsertion of the lock mechanism.

With photos at hand of the gun as it appeared fresh from the sea floor, each piece of broken rock was laid out in sequence along the major center section of the weapon and then tried for a proper fit. Rough edges were smoothed with a diamond bit until things fit together as they should. Work was started at the muzzle, fitting two or three chunks of rock at a time, and progressed up the barrel towards the lock area. Each piece is set in place with anchoring cement, and internal strengthening wires are used to make the finished weapon one solid, integral piece. Delicate chunks of rock are also set with brass or stainless pins along critical edges to keep them from easily breaking off. All internal cavities along the barrel are poured solid with cement. At this point a decision was made to replace the missing pommel, trigger guard, and grip section. I happened to have the right parts on hand and it seemed appropriate to put the old weapon back as close as possible to its original configuration. The pommel is of plain brass and matches the brass end cap and ramrod thimble that have been left exposed. The trigger guard I had on hand is actually made up from pieces of four different guards from similar guns. The sections are brazed together to build the complete part. A slot was cut into the encrustation to fit the trigger guard. The pommel is fitted with a heavy brass rod to act as a reinforcing wire for the missing grip section, but before this could be set in place the cavity for the lock mechanism needed to be prepared. First, the lock was held in its correct location while the main retaining screw bores through the gun stock were located and marked. Next, what remained of corrosion-filled wood and residual rust from the original iron was ground away with high speed carbide and diamond burrs. None of this salt-laden material could be left where it might come in contact with the iron lock and start the corrosion process all over again. Now the brass pommel rod could be fitted to the cavity and passed through a hole bored in the aft end of the encrustation. Another shorter rod was also added to help reinforce the attachment point for the new grip section. After the rods were properly shaped and put in place, the whole cavity was poured solid with new cement and then carved to its proper dimensions when the concrete began to set up. To locate a pommel in its correct position when the grip section is missing is a bit tricky. The first thing that must be done is to set the heavy brass rod, noted in the preceding paragraph, into the pommel cavity with

anchoring cement. The rod is then curved to the profile of the grip and left long enough to continue several inches into the aft section of the gun stock remains. The trigger guard is used as a gauge to correctly position the pommel. Small brass pins are set in several places at the aft end of the stock to act as secure anchoring points where new cement bonds to the original surface. Additional wires are also added in strategic places to ensure a strong and crack resistant repair. When all fits as it should, the whole gun is braced in an upside down position and fitted with aluminum foil that serves as a form for anchoring cement. Cement is mixed to a creamy slurry texture and poured into the cavity. At this point I use an electric engraver as a vibrating tool to force the mix into all cracks and pockets. I simply touch it to the side of a narrow blade that is pushed around in the wet cement. Due to the shape of the grip, several separate pours are necessary before the missing section is complete. Small 'j-bolt' wires are set in the wet material to act as anchors for each succeeding pour. After the fresh cement has firmed up, unwanted material is trimmed away before a new foil form is set in place to repeat the process. The trigger guard is set in its proper position during the last pour to ensure an ideal fit. When the cement first sets up the guard is tapped loose to leave a cavity on the underside of the grip that perfectly matches the aft end of the piece. The whole gun is now set aside to cure overnight.

Next, the trigger guard is permanently set in place. Anchoring cement is mixed with a little lampblack to darken it and poured into the trigger guard slot. The piece is then pushed firmly into the groove. The guard is held tightly to the gun with rubber bands while the cement thoroughly cures. Small dental tools and a tooth brush are used to trim excess material away before things permanently harden.

Now the lock could be fitted to the weapon. As a first step, more trimming was done to the lock cavity to ensure no contact would be made between lock internal parts and the surrounding walls. The lock was then held in its exact location and two points where the original mounting screws had passed through the gun were marked. These were bored out with a diamond hole drill. The area around the trigger sear was also bored out with the same drill to clear the mechanism, just as the wood cavity had been prepared by the original gunsmith. The lock could now be set in its proper place.

The idea with this particular restoration is to allow the lock mechanism to be removed from the gun so its internal parts can be observed. To do this, two of the lock retaining screws has brass tubes bonded to them that can slip inside matching tubes set into the stock cavity. In this manner the lock can be easily slipped in and out of the lock cavity. When everything was set and fitted as it should, the lock cavity interior was given a black wash coating to darken it to a natural wood color. It was then finished with three coats of Incralac® to permanently seal the surface from any salt intrusion problems.

The flintlock was now ready for a coating of laboratory-made sea rock to match the original surface and cover raw anchoring cement, as well as the large number of repaired cracks and blemishes. This lab-rock is made from a mixture of anchoring cement, sand, small sea shells, and sea shell fragments. It is chemically similar to the natural encrustation found on all sea salvaged objects. About three tablespoons of mix are prepared at a time. A little lampblack powder is added to darken the mixture to produce a natural color, and it is then applied with a small spatula over a wetted surface. When the mix begins to set up a small paint brush is used with plain water to smooth it in place. Small shells and other debris come to the surface at this time to give it a completely natural finish. Work continues in this manner until the whole pistol is covered with a thin coating of fresh rock. The gun is then set aside to completely cure.

When the rock is dry its surface is covered with white powder. This is removed with a 10% mixture of citric acid and water. A soft tooth brush used under running water aids in the cleanup process and produces a final polish to the exposed seashells. When the gun is again dry, final colors to duplicate rusty areas and other color highlights that had been on the original encrustation are applied with a small artist's brush. These colors are made from natural earth elements and powdered salt-free rust and are blended into the surrounding surface with alcohol.

The exposed brass parts are given a final bead polish and then coated with a 50% mix of Incralac® and Cabosil® glass beads to protect them from corrosion. After the weapon has been allowed to cure overnight, the whole surface is then coated with a 25% mix of Incralac® and Cabosil® to give the colors limited protection from ultraviolet light and careful handling. Note: The artifact should always be handled with clean hands and treated as a very fragile object. It should never be displayed in direct sunlight or fluorescent light and must be kept in a humidity stable environment. (see Figure 2)



Figure 2

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