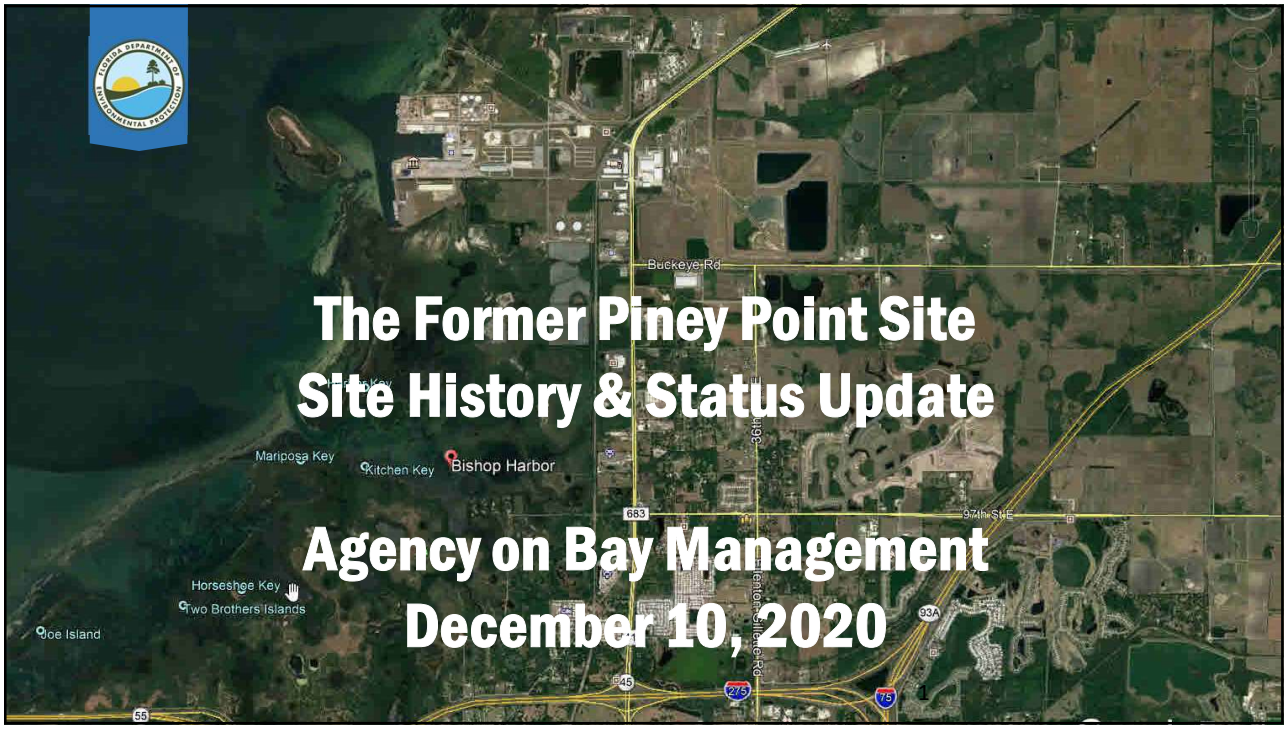


The Former Piney Point Site
Site History & Status Update

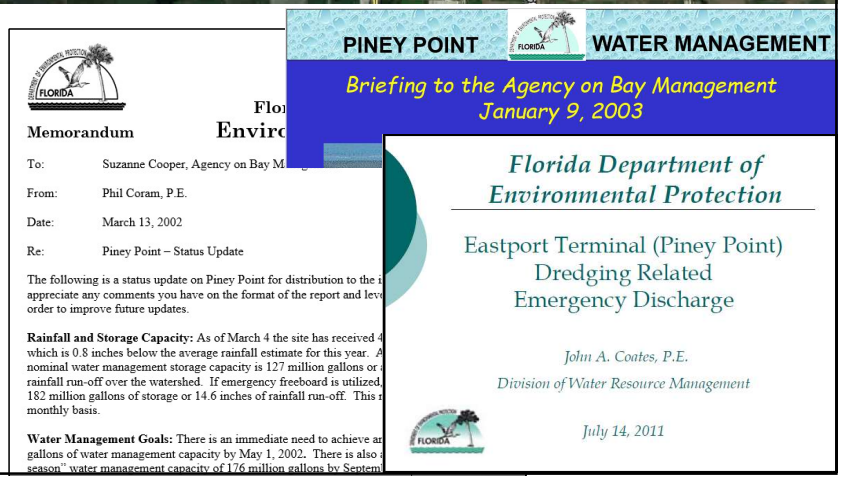
Agency on Bay Management
December 10, 2020

1

1

Piney Point
A History of ABM Updates

- Past Updates for ABM
  - Periodic Presentations
  - Written updates during closure operations
- 2011 Port Manatee Dredging update
- Now… 2020 Update



Memorandum

To: Suzanne Cooper, Agency on Bay M

From: Phil Coram, P.E.

Date: March 13, 2002

Re: Piney Point – Status Update

The following is a status update on Piney Point for distribution to the
appreciate any comments you have on the format of the report and lev
order to improve future updates.

Rainfall and Storage Capacity: As of March 4 the site has received
which is 0.8 inches below the average rainfall estimate for this year.
nominal water management storage capacity is 127 million gallons or
rainfall run-off over the watershed. If emergency freeboard is utilized,
182 million gallons of storage or 14.6 inches of rainfall run-off. This
monthly basis.

Water Management Goals: There is an immediate need to achieve ar
gallons of water management capacity by May 1, 2002. There is also
season" water management capacity of 176 million gallons by Septem

PINEY POINT WATER MANAGEMENT

Briefing to the Agency on Bay Management
January 9, 2003

Florida Department of Environmental Protection

Eastport Terminal (Piney Point)
Dredging Related
Emergency Discharge

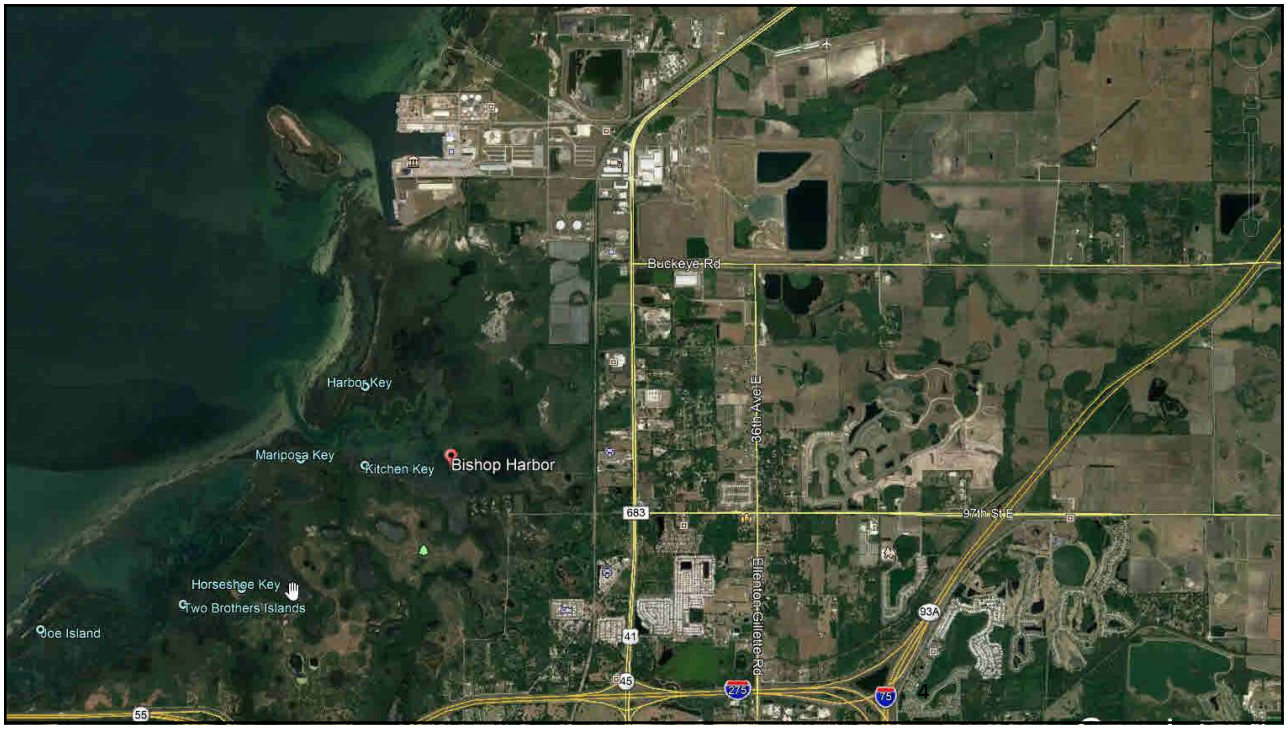
John A. Coates, P.E.
Division of Water Resource Management

July 14, 2011

2

- Review the History of the Piney Point Site
  - Site History and Early Expectations
  - Review the Piney Point Closure, Site Infrastructure, and Closure Water Management [following 2001 Mulberry Corporation Bankruptcy]
  - Berth 12 and the Dredged Materials in OGS Compartments
- Process Water Management - Status Update
- HRK's Future Water Management Options
- Summary

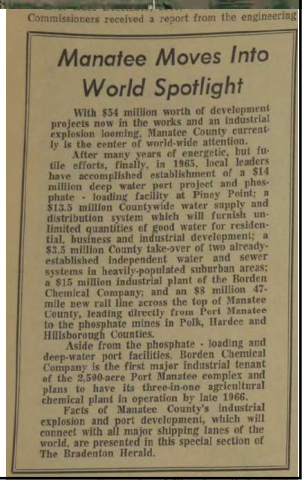
3



4

Manatee County's… port development are presented in this special section of The Bradenton Herald, September 19, 1965

- "… in 1965, local leaders have accomplished establishment of a $14 million deep water port and phosphate loading facility at Piney Point; a $13.5 million Countywide water supply and distribution system…; a $15 million industrial plant of the Borden Chemical Company…"
- "… Borden Chemical Company is the first major industrial tenant of the 2,500 acre Port Manatee complex…"



Commissioners received a report from the engineering

Manatee Moves Into World Spotlight

With $54 million worth of development projects now in the works and an industrial explosion looming, Manatee County currently is the center of world-wide attention.

After many years of energetic, but futile efforts, finally, in 1965, local leaders have accomplished establishment of a $14 million deep water port project and phosphate - loading facility at Piney Point; a $13.5 million Countywide water supply and distribution system which will furnish unlimited quantities of good water for residential, business and industrial development; a $3.5 million County take-over of two already-established independent water and sewer systems in heavily-populated suburban areas; a $15 million industrial plant of the Borden Chemical Company; and an $8 million 47-mile new rail line across the top of Manatee County, leading directly from Port Manatee to the phosphate mines in Polk, Hardee and Hillsborough Counties.

Aside from the phosphate - loading and deep-water port facilities, Borden Chemical Company is the first major industrial tenant of the 2,500-acre Port Manatee complex and plans to have its three-in-one agricultural chemical plant in operation by late 1966.

Facts of Manatee County's industrial explosion and port development, which will connect with all major shipping lanes of the world, are presented in this special section of The Bradenton Herald.

5

6

7

- Closure and Mulberry Corporation bankruptcy in February 2001
- Department steps in with Court Appointed Receiver
- Stack Condition
  - 70+ foot high stack system
  - 1.2 billion gallons of process water in cooling ponds, settling compartments, and in saturated stack
- Heavy Rains, a continuing challenge
  - TS Gabrielle – 13 in. rain in September 2001
  - December 2002 – 16.5 in. rain

8

Piney Point
Phosphogypsum Stack System

January 18, 2002

- Piney Point Phosphogypsum Stacks w/ Tampa Bay in Background
- Process Water storage:
  - cooling ponds,
  - settling compartments, and
  - saturated in stack
- Seepage Collection Ditches

9

Piney Point
Phosphogypsum Stack System

December 2002

- NGS-N Compartment
- Closure Dewatering underway
- December 2002 – 16.5 in. rain
- Rains Stop Closure Construction

10

Piney Point
Phosphogypsum Stack System

January 2003

- Following record December 2002 rains
- 1.4 billion gallons process water
- Site can hold only 2.5 inches of additional rainfall

11

Piney Point
Phosphogypsum Stack System

April 16, 2004

- Engineer's certification of completion for NGS-N
- OGS-S and OGS-N Compartments being closed

12

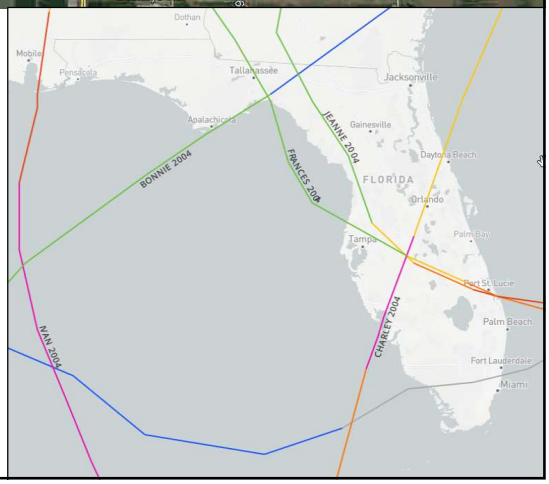
Piney Point
Phosphogypsum Stack System

2004 Hurricane Season *

Events in the neighborhood

- H. Charlie, ~ Aug. 13, 2004
- H. Frances, ~ Sep. 5, 2004
- H. Ivan, ~ Sep. 15, 2004
- H. Jeanne, ~ Sep. 26, 2004

* Historical Hurricane Tracks, http://coast.noaa.gov/hurricanes



13

Piney Point
Phosphogypsum Stack System

September 12, 2004

- Completed Liner Installation 9-12-2004, a Couple of days prior to Hurricane Ivan passing by in Gulf of Mexico.
- Removing Process Water from NGS-S

14

Piney Point
Phosphogypsum Stack System

Dewatering NGS-S, November 18, 2004

Lining NGS-S, April 14, 2005

15

Piney Point
Phosphogypsum Stack System

January 6, 2006

- Begin Cap Areas and Relief Ditch

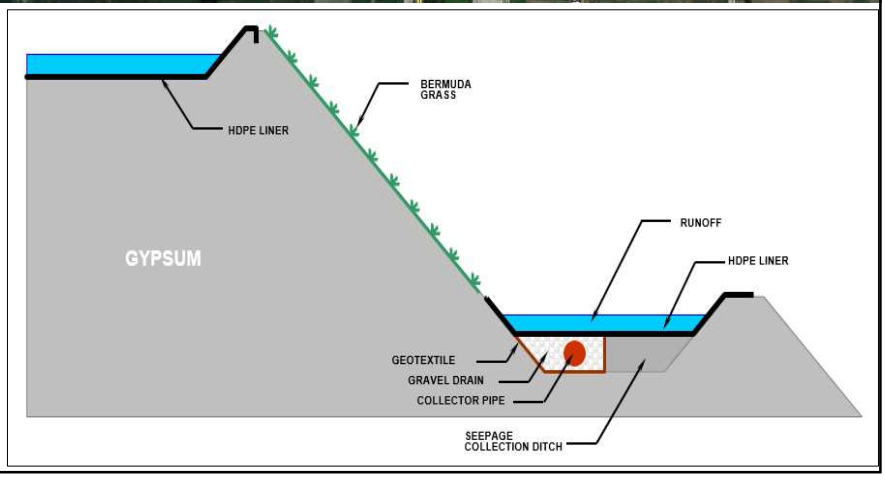
Compartment	Original Capacity, MGal	Lined Reservoir Capacity, MGal
NGS-N	125	270
OGS-S	110	155
OGS-N	145	240
NGS-S	300	640
TOTAL	680	1,305

16

Piney Point
Phosphogypsum Stack System

2006

- Complete Cap Areas
- Side Slope grassing
- Begin Buried Drain construction in Seepage Ditches



17

Piney Point
Phosphogypsum Stack System

June – August 2006

- Phase I seepage drains
- Grassing side slopes
- Lined Stormwater Ditches

18

Piney Point
Phosphogypsum Stack System

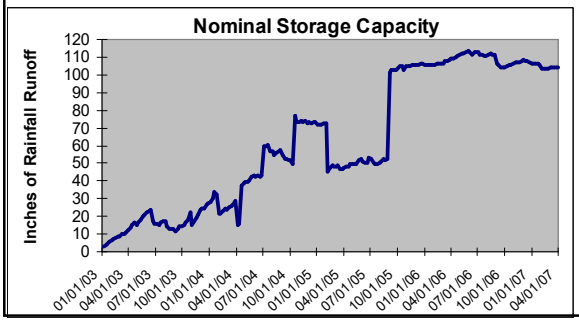
- August 2006
- Closing – SCP-S
- Constructing 10-acre Lined Process Water Sump

19

Piney Point
Phosphogypsum Stack System

February 7, 2007

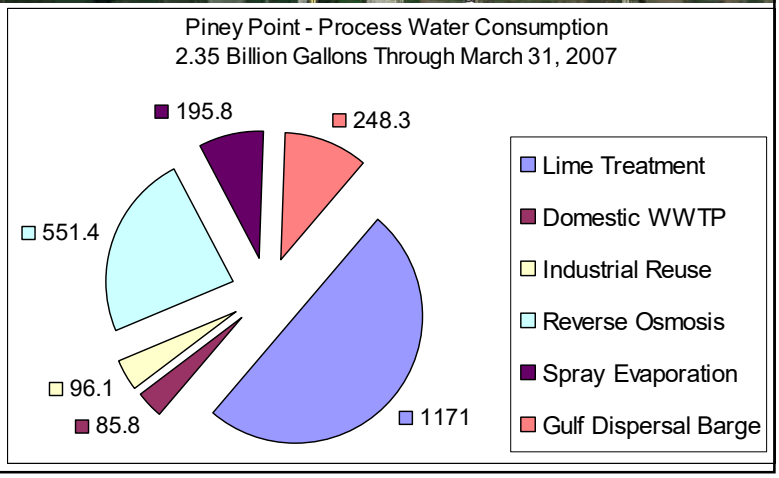
- Storage Capacity ~ 90+ inches rainfall



20

Piney Point
Phosphogypsum Stack System

- 2.35 Billion Gallons Removed
- Six Options used to safely remove process water
- Treated Surface Water Discharges: 73%



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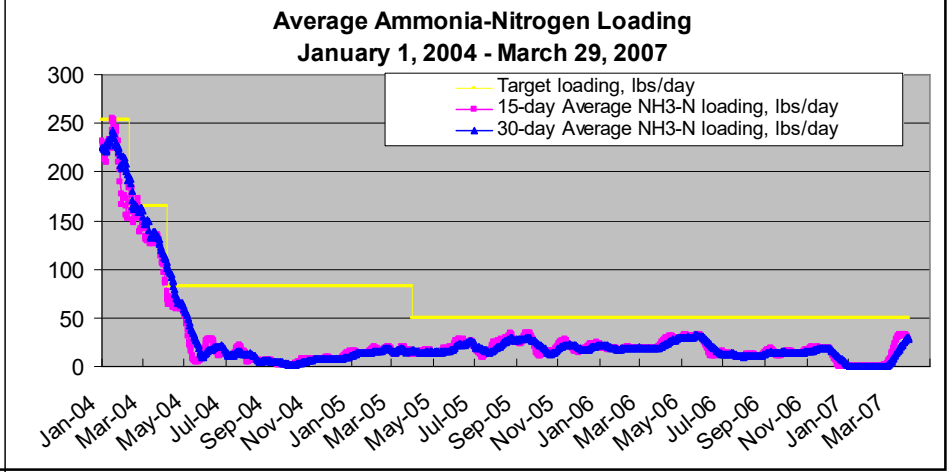
Piney Point
Phosphogypsum Stack System

- Spring 2007
- Loading Targets
- Treated Process Water Discharge Ceased



22

HRK Holdings, LLC

- Acquired Site from Bankruptcy Trustee in August 2006 (new DEP Administrative Agreement)
- Department continued closure contingent on continued Legislative funding.
- HRK assumed responsibility for long-term care of site
- Coordinate Site Activities: Closure work, site cleanup, demolition activities, etc.
- HRK demolition of buildings and cleanup of scrap, etc. in plant site drainage areas

- Any future uses must protect and be compatible with integrity of stack closure, long-term care, etc.
- April 19, 2007, Manatee County Port Authority / HRK Dredged Materials Containment Agreement (DMCA) Authorized

23

January 2011

- Treated process water discharges to Bishop Harbor eliminated in 2007
- ~2.5 billion gallons of process water & storm water removed
- 1.3 billion gallons of lined storage available in closed reservoirs
- Closure Construction Completed

24

Piney Point
Berth 12 Construction

- April 19, 2007, Port Manatee / HRK DMCA Authorized
- Order No. 06-1685, amended August 20, 2007, with conditions for operating dredge materials disposal area
- Port Manatee Permit No. 0129291-016-EM modified January 16, 2008, approving dredge material placement at Piney Point
- HRK O & M Plan Approved September 23, 2010
  - ~1.5 million cubic yards of dredge materials
  - 40,000 gallons per minute

25

Piney Point
Berth 12 Construction

HRK and Port Manatee Berth 12 Construction Project

- Berth 12 Dredging Commenced on April 22, 2011, into OGS-S
- HRK operating and monitoring the dredge disposal site

26

Piney Point
Berth 12 Construction

April 26, 2011, Continued Dredging for Berth 12

27

Piney Point
Berth 12 Construction

- May 11, 2011, HRK reports increased flow, conductivity and chlorides indicative of seawater introduction into buried drains around stack system
- EFO No. 11-0813, issued May 29, 2011, for conditions in the OGS-S south wall & stormwater ditch
- June 4, 2011, suspended dredging operations, leak found in NGS-S clarification pond
- June 7, 2011, controlled breach in OGS-S stormwater ditch dike to relieve pressure onsite

28

29

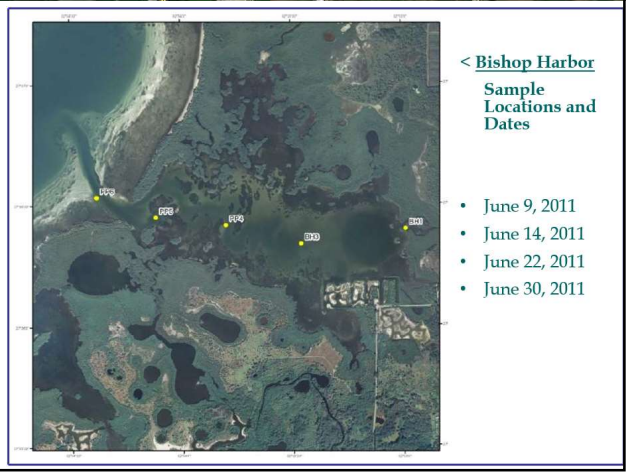
Piney Point
Berth 12 Construction

- 20 days, last day of the emergency discharge on June 16, 2011
- Total emergency discharge of seawater from Berth 12 during the period of 169.18 million gallons
- Environmental Monitoring of Emergency Discharge, Sampling; June 17, 2011, media event; June 28, 2011, summary for ABM, TBEP, etc.

30

Piney Point
Berth 12 Construction

- Total nitrogen loading contributions from this emergency discharge were 3.5 tons (< 1.7% of annual allocation for area)
- July 2011: Revised O&M plans approved with conditions and additional protective measures
- HRK Completion of grouting and repairs by July 19, 2011, and Engineer's recommendations



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Piney Point
Berth 12 Construction

- Dredging resumed July 22-23, 2011
- MCPA Berth 12 Project Completed with First Ship on October 21, 2011 – for Mayo Fertilizer
- April 2010 with April 2012
- HRK cleaned/repaired conveyances and Piney Point Site

April 2010

April 2012

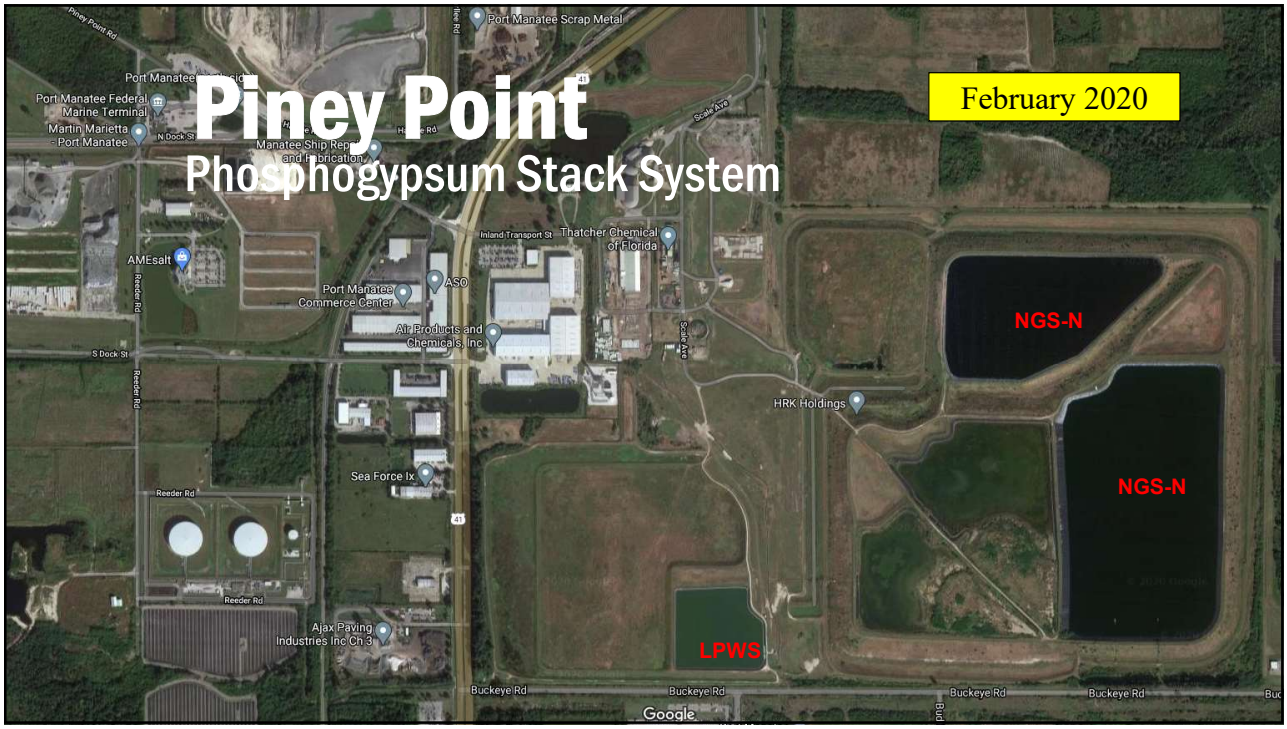
32

Current Conditions and Needs

Process Water Management Status Update

Piney Point

33



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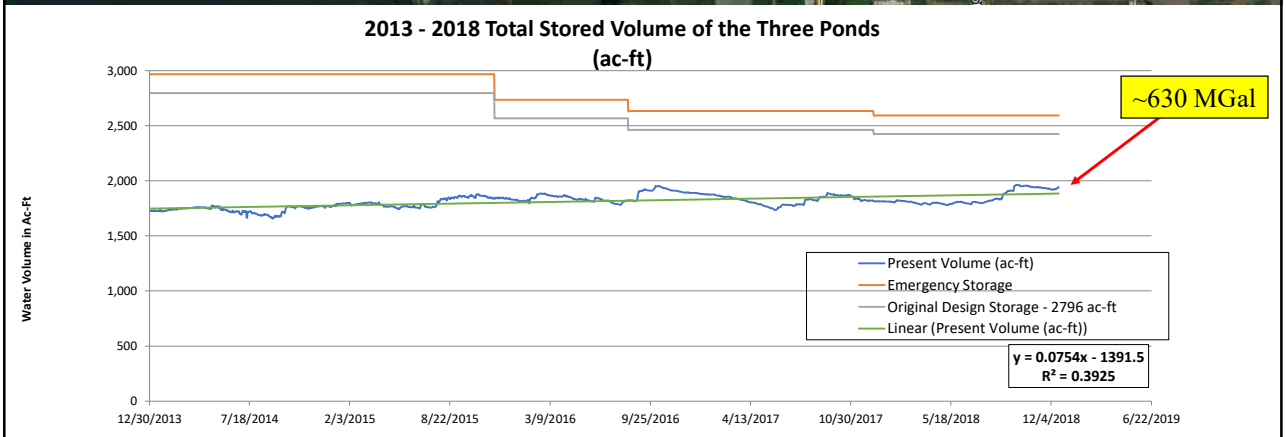
Piney Point
Process Water Management



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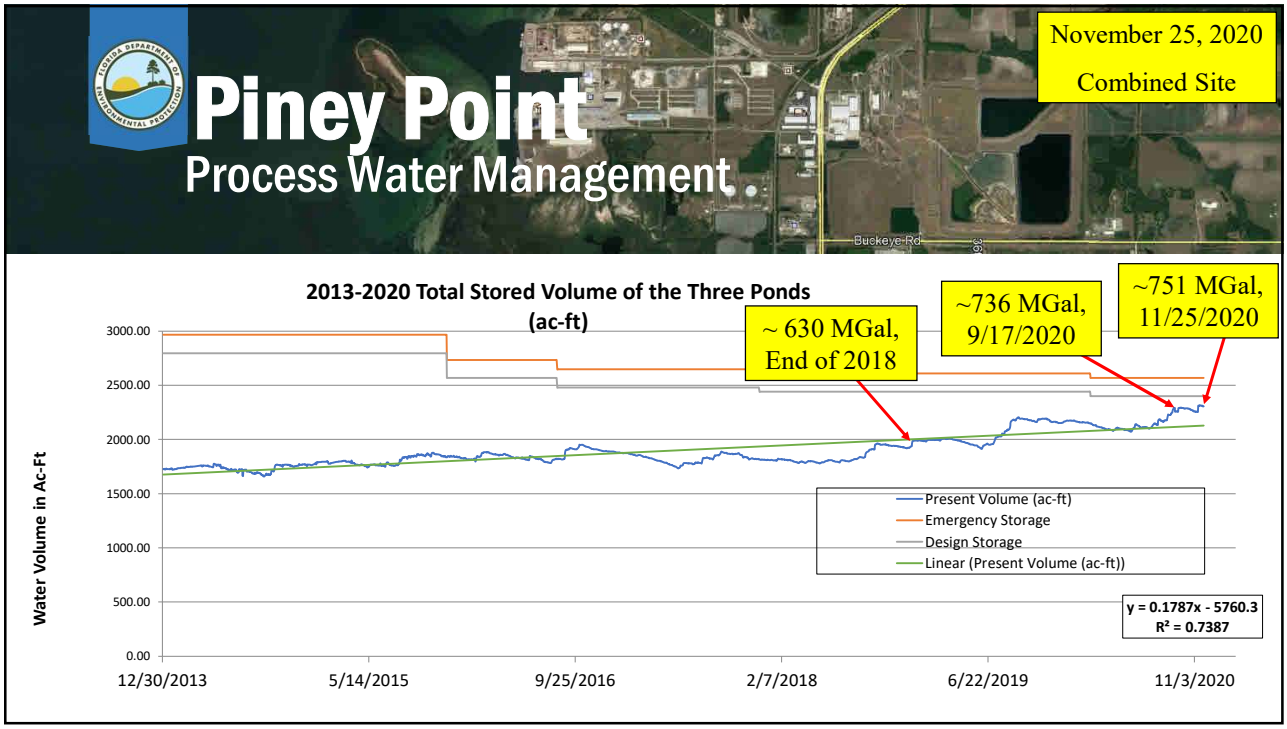
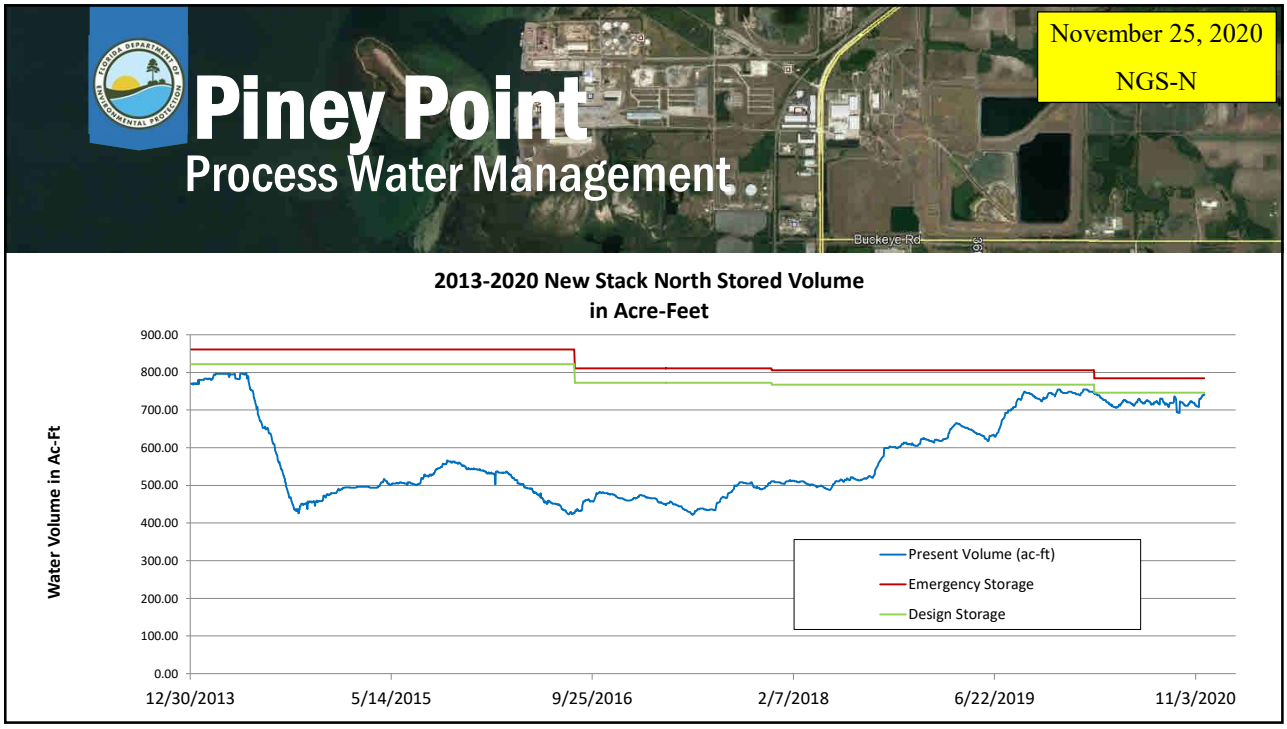
Piney Point
Process Water Management

Water levels from November 25, 2020

36


Piney Point
Process Water Management
November 25, 2020
Combined Site
2013-2020 Total Stored Volume of the Three Ponds (ac-ft)
~ 630 MGal, End of 2018
~736 MGal, 9/17/2020
~751 MGal, 11/25/2020
Water Volume in Ac-Ft
3000.00
2500.00
2000.00
1500.00
1000.00
500.00
0.00
12/30/2013
5/14/2015
9/25/2016
2/7/2018
6/22/2019
11/3/2020
Present Volume (ac-ft)
Emergency Storage
Design Storage
Linear (Present Volume (ac-ft))
y = 0.1787x - 5760.3
R² = 0.7387

37


Piney Point
Process Water Management
November 25, 2020
NGS-N
2013-2020 New Stack North Stored Volume in Acre-Feet
Water Volume in Ac-Ft
900.00
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
12/30/2013
5/14/2015
9/25/2016
2/7/2018
6/22/2019
11/3/2020
Present Volume (ac-ft)
Emergency Storage
Design Storage

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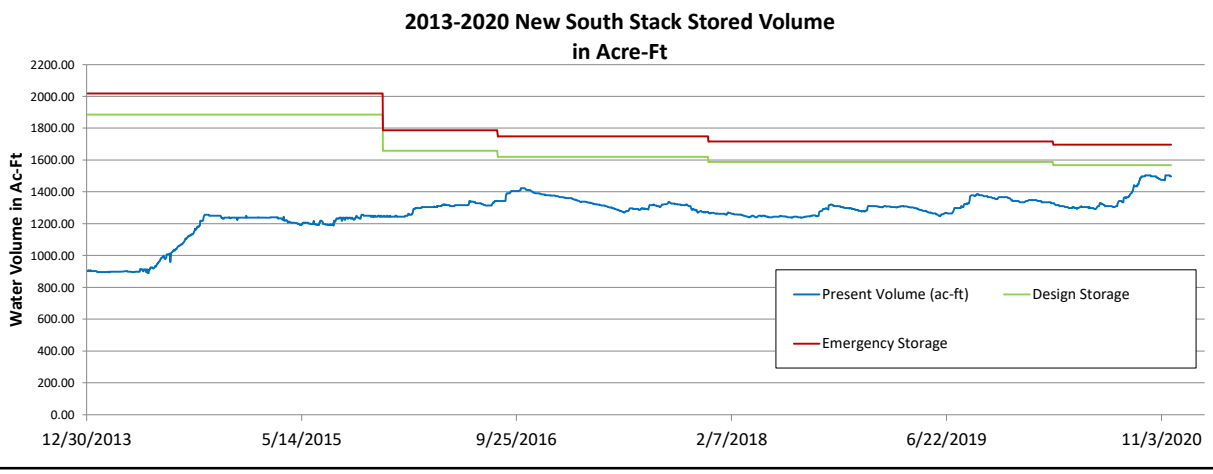
Piney Point
Process Water Management

November 25, 2020
NGS-S



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Piney Point
Process Water Management

Current Conditions – Storage Capacity

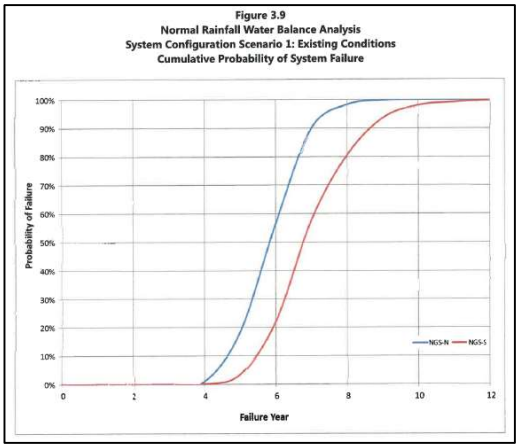
- 2018: 454 acre-ft. (148 MGal, ~46 in. rainfall)
- 2020: 97 acre-ft. (32 MGal, ~9.7 in. rainfall)
- Accumulation rate is ~ 18 MGal/year
- Based on Max. Design/Freeboard Levels

- HRK continues Spray Evaporation to enhance water removal

40

HRK – Process Water Management

- HRK is obligated to manage process water
- Pre-Dredging Solution – Continued Operations
  - Ongoing Spray Evaporation
  - POTW treatment and discharge
    - Removing ~ 150,000 gallons per day in May 2011
    - Has Not Been an Option Post-Dredging – seawater Chlorides
- Current Spray Evaporation is effective – but not enough
- Additional Options are needed (see HRK stochastic rainfall analysis)



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HRK – Process Water Management

- Arcadis Study, May 2016
- Evaluated 8 Alternative Scenarios (7 Options)
  - 3 Surface Water Discharge options (lime treat, RO)
  - 2 Spray Evaporation options (existing and enhanced)
  - UIC option
  - POTW option
- Identified Pros and Cons, and Assumptions
- Estimated Costs ($7 to $15 /1,000 gallons)

Evaluated Alternatives

1. Enhanced Spray Evaporation
2. Spray Evaporation/POTW
3. UIC

8. RO option – lowest ranked

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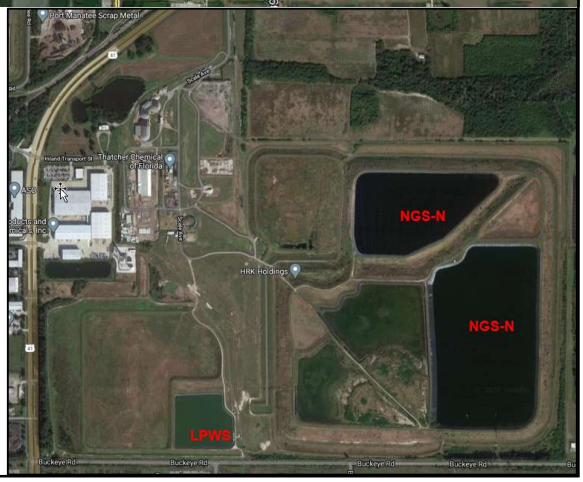
Piney Point
Process Water Management

HRK – Future Process Water Management

- Continue NGS-N spray system operation
- Additional spray evaporation systems
- HRK – water treatment studies, surface water discharge
  - Evaluate different water sources
  - Evaluate electrolysis - ammonia oxidation to N_2 gas
  - Evaluate effectiveness and costs, Tampa Bay TMDL & site allocation of 0.9 tons/year total N
- UIC options
- Interim resumption of POTW discharge?



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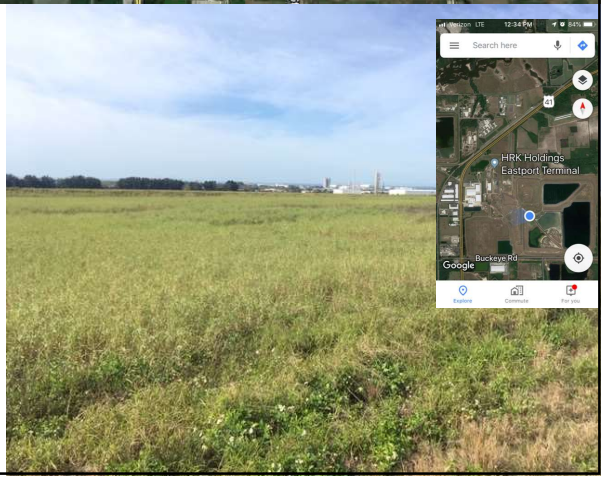
Piney Point
Current Conditions

HRK Accountability

- HRK performing gypstack long-term care
  - Environmental Monitoring
  - Process Water Management
  - Stormwater Management
  - Pump maintenance & replacements
  - Maintaining buried collection drains
  - Liner inspections, maintenance & repairs
  - Mowing/site maintenance



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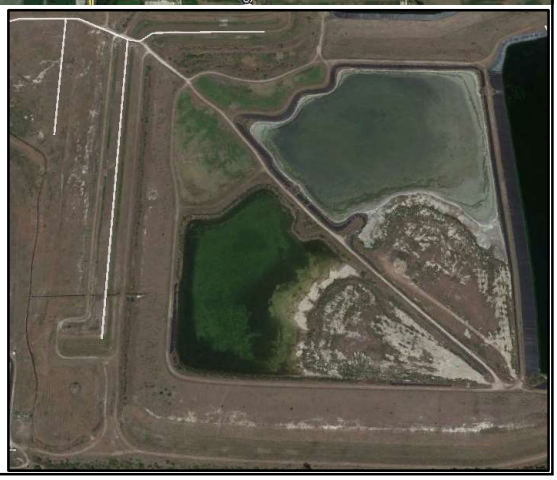
Piney Point
Current Obligations

HRK Obligations at Piney Point

- Long-term Care Performance, including Process Water Management
- Long-term Care Financial Assurance
- Dredge Disposal Area Management
  - Return Salty stormwater to Port
  - OGS Capping obligation
- Contingencies (e.g., freeboard, OGS, etc.)



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Piney Point
Summary

- Piney Point Site and Port Manatee and have shared history and interests
- Piney Point Closure completed, except for remaining process water storage compartments
- HRK Needs to Perform Capping for Dredged Materials in OGS Compartments
- Process Water Management Options are Needed
- Limited remaining Financial Assurance Funds
- Interim Options – resumption of limited POTW discharge
- HRK Contingencies, if needed
- Protect Bishop Harbor, Tampa Bay, and all Florida Water Resources

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Contact
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john.coates@floridadep.gov
Division of Water Resource Management
Florida Department of Environmental Protection
Harbor Key
Mariposa Key
Bishop Harbor
Horseshoe Key
Joe Island
683
45
275
75
55

47