July 21, 2023 Project No. 31406680

Ms. Cindy Mulkey
Administrator
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399

RE: NEW HOPE POWER COMPANY (PA 04-46D)
AMENDMENT TO SITE CERTIFICATION APPLICATION

Dear Ms. Mulkey:

On behalf of New Hope Power Company ("NHPC"), WSP USA Inc. ("WSP"), is submitting this request for amendment to the Site Certification Application ("SCA") for the Okeelanta Cogeneration Facility ("Facility"). The Facility is located at 8001 South US Highway 27, approximately 6 miles south of South Bay in Palm Beach County, Florida. The site is located approximately 8 miles south of Lake Okeechobee and approximately 2.5 miles west of the North New River Canal.

NHPC's amendment of the Site Certification Application (SCA) is for installation of a backup natural gas-fired package boiler (Boiler D). The package boiler will only operate when:

- One of the main NHPC boilers (Boilers A, B or C) is shutdown for repairs or maintenance,
- One of the main boilers (Boilers A, B or C) is in the process of shutting down or in the process of starting up, or
- The package boiler is needed to meet normal steam demand of the Okeelanta sugar mill and refinery, due to one of the main boilers (Boilers A, B or C) operating at reduced steam load.

NHPC operates its existing boilers to supply the adjacent Okeelanta sugar mill and refinery with process steam, generate electricity for internal use, and generate electricity for sale to the grid. The proposed package boiler will not be installed to provide steam to the electrical turbine generators but will support sugar processing by replacing steam generation short fall from a main NHPC boiler as described above. The sugar mill operates to process the annual sugarcane crop. The length of the harvest typically extends from mid-October through April or May. The length of the season varies somewhat each year due to the amount of sugarcane which must be processed. The goal each season is to process all of the harvested sugarcane as efficiently and with the best yield as possible. However, whenever a main boiler is shutdown for repairs or maintenance, the sugar mill and refinery must shutdown or operate at reduced production. This slows the harvesting operations, which extends the season further. Any slow down of sugarcane processing or downtime for the sugar mill and refinery due to lack of steam is inefficient, reduces yields, and is very costly.

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In the last few years, the main boilers have been experiencing increased downtime due to repairs and maintenance. Therefore, NHPC is planning a boiler rehabilitation project which will replace pressure parts of all three boilers over a 4-year period. During this period, a main boiler may be out of service for a month or longer. The proposed natural-gas-fired package boiler will alleviate downtime or reduced process rates for the sugar mill and refinery during such periods and enable the sugarcane harvest to be processed more efficiently. At the end of the 4-year boiler rehabilitation project, NHPC plans to sell the package boiler.

NHPC is not requesting any increase in the permitted steam production rate for the Facility. The main boilers already supply an adequate amount of steam for the sugar mill and refinery when operating normally, firing the bagasse coproduct of the mill. The proposed gas-fired package boiler will allow the sugar mill and refinery to continue to operate nearer to normal capacity than otherwise possible without a backup boiler during times that a main boiler is shutdown for repairs or maintenance.

The steam generated by the proposed package boiler will by-pass the turbine generators and feed into the sugar mill and refinery steam supply header. The steam produced by the package boiler will not be connected into the inlet of either turbine generator. Therefore, the proposed package boiler amendment will not alter the existing electrical generating capacity of the facility.

A detailed summary of the proposed package boiler project is provided in Attachment A. A detailed description of the project is also contained in the air permit application, submitted to FDEP on June 30, 2023 (application no. 0990332-026-AC). Attachment B is a technical memorandum evaluation of stormwater associated with the proposed installation of Boiler D, and includes aerial figures of the proposed location next to the existing boilers.

In summary, for this amendment to the SCA for a backup natural gas-fired boiler (Boiler D):

- NHPC is not requesting any increase in the permitted electrical generating capacity of the Facility, which is 140 MW.
- NHPC is not requesting any increase in the permitted steam generation rate, which is 1,518,300 lb/hr (506,100 lb/hr each boiler).
- Okeelanta sugar mill, refinery, and transshipment facility are not requesting any increase in the permitted production/process rates.
- NHPC is not requesting any changes to the current Conditions of Certification.
- The changes in air emissions due to the proposed package boiler addition are described in the air permit application submitted to FDEP. In summary, there will be no increase in air emissions due to the natural gas-fired package boiler addition. The package boiler will only operate to replace a portion of the steam lost from one of the main boilers. The proposed package boiler is of smaller capacity and more efficient than the existing main boilers. Due to firing natural gas only, emissions from the package boiler are lower on a lb/MMBtu heat input basis compared to NHPC's existing main boilers.

In support of the requested amendment, WSP has prepared an analysis indicating how the proposed installation and operation of Boiler D relates to the current conditions of certification. The summary provided below is outlined with the headings found in Section B of the Conditions of Certification (PA 04-46D), Specific Conditions.

I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

A. INDUSTRIAL WASTEWATER

Section B.I.A of the Conditions states the following:

> *At a minimum, projects which involve any one of the following shall be reviewed by the Department to determine whether a modification to these Conditions is required, and if a modification is required, it shall be processed in accordance with Section 403.516(1)(c), F.S., and Rule 62-17.211, F.A.C., as applicable:*
>
> *1) New major sources or deletion of existing major sources of wastewater;*
> *2) Improvements made to existing wastewater treatment facilities, or construction of new wastewater treatment facilities, including new or expanded land application systems that will result in an increase in the permitted capacity of the facilities;*
> *3) Pollutants not addressed in the GWMR or these Conditions;*
> *4) Other projects that cause or may cause changes to the quantity and/or quality of discharges to groundwater as a result of solid waste disposal or industrial wastewater treatment.*

The industrial wastewater (blowdown) from the proposed package boiler will be lower in volume, and equivalent or better in quality, compared to the main boilers. The proposed boiler is natural gas-fired and more efficient at generating steam than the main boilers, thus will have a positive impact on the industrial wastewater system.

1) No new major sources, or deletions of existing major sources of wastewater will result from the proposed Boiler D;

2) Improvements will not be needed or made to existing wastewater treatment facilities; No construction of new wastewater treatment facilities will occur, and no changes will be made that could result in an increase in the permitted capacity of the facilities;

3) No new pollutants will be introduced to the wastewater from the proposed Boiler D installation or operation.

4) The proposed Boiler D project will not cause or result in an increase in the quantity, or change the quality of discharges to groundwater as a result of solid waste disposal or industrial wastewater treatment.

No specific conditions in Section B.I.A of the Conditions of Certification need to be revised due to the proposed package boiler addition.

B. BY-PRODUCT AND SOLID WASTE

Other than reduced generation of ash when steam is produced with the package boiler instead of operating a bagasse-fired boiler, there will be no changes to or impacts upon by-products or solid waste due to the proposed package boiler. No specific conditions in Section B.I.B of the Conditions need to be revised due to the proposed package boiler addition.

II. DEPARTMENT OF TRANSPORTATION

There will be no impact upon Department of Transportation regulated aspects of the project. NHPC and its contractors will continue to comply with Best Management Practices contained in Section B.II

of the Conditions. No specific conditions in Section B.II of the Conditions need to be revised due to the proposed package boiler addition.

III. SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Water use by the proposed boiler will be less than for the main boilers, as the proposed boiler will require less makeup water. No specific conditions in Section B.III of the Conditions need to be revised due to the proposed package boiler addition. No changes to the authorized maximum monthly or annual withdrawal of water from the Miami/North New River Canals, from the Surficial aquifer, or from the Floridan aquifer are being requested.

Since the proposed boiler will be located at a location already cleared, filled, compacted and graded next to the main boilers, no dewatering activities will be required.

IV. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Since the proposed package boiler will be located upon an already cleared and graded site, next to the main boilers, there will be no impacts to listed species due to the project. No specific conditions in Section B.IV of the Conditions need to be revised due to the proposed package boiler addition.

V. DEPARTMENT OF STATE-DIVISION OF HISTORICAL RESOURCES

No cultural resource areas of the site will be affected as the site area is already cleared and graded. No specific conditions in Section B.III.V of the Conditions need to be revised due to the proposed package boiler addition.

VI. DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

No herbicides or pesticides will be applied during the project since it is already a cleared and graded site. No specific conditions in Section B.III.VI of the Conditions need to be revised due to the proposed package boiler addition.

VII. PALM BEACH COUNTY

A. FLOOD CONTROL PROTECTION

The site area already complies with all applicable non-procedural County flood protection requirements. No specific conditions in Section B.III.VII.A of the Conditions need to be revised due to the proposed package boiler addition.

B. ZONING

No zoning changes will be required for construction/operation of the package boiler. No specific conditions in Section B.III.VII.B of the Conditions need to be revised due to the proposed package boiler addition.

C. NOISE

The NHPC facility already complies with applicable noise ordinances, and this will not be affected by the proposed project. The proposed package boiler, due to its nature, will create less noise than then the main boilers, and therefore there should be no increase in off-site noise impacts. No specific

conditions in Section B.III.VII.C of the Conditions need to be revised due to the proposed package boiler addition.

D. SCREENING

The proposed package boiler will be much smaller in size compared to the main boilers, and therefore there will be no impact upon visual screening for the NHPC facility. No specific conditions in Section B.III.VII.D of the Conditions need to be revised due to the proposed package boiler addition.

E. EMERGENCY MANAGAMENT

The current comprehensive hurricane preparation and recovery plan for the New Hope Power Company facility will not be affected by the proposed project. The plan must be updated whenever an additional generating unit is brought into service at the New Hope Facility. However, a new generating unit is not being brought into service. No specific conditions in Section B.III.E of the Conditions need to be revised due to the proposed package boiler addition.

NHPC looks forward to working with the Department on this request to amend the SCA. If you have any questions regarding this request, please contact me at (352)514-5600 or dave.buff@wsp.com, or Matthew Capone, P.E., of NHPC at (561)366-5117 or matthew.capone@floridacrystals.com.

Sincerely,

WSP USA INC.

David A. Buff

David A. Buff, P.E.
Practice Leader

Attachments

cc: M. Coglianese, NHPC
J. Gonzalez, NHPC
M. Capone, NHPC
G. Miller, Miller Engineering, Inc.

ATTACHMENT A

Summary of Proposed Package
Boiler Project

ATTACHMENT A

SUMMARY OF PROPOSED PACKAGE BOILER PROJECT

NHPC is proposing to purchase and install a natural gas-fired package boiler to provide steam for when one of the primary cogeneration boilers is down for maintenance. The three primary cogeneration boilers have been experiencing increased downtime in recent years, requiring power purchases and resulting in a loss of mill and refinery sugar processing yields, increased production costs and an increase in other boiler failure-related operational costs. Each boiler failure results in an average of 36 hours of downtime. This results in harvesting losses, increased costs, and an extended harvest processing time, since cane harvesting and processing must be reduced during boiler repairs or downtime. In addition, sugar refinery production losses and increased costs can result.

This package steam boiler will provide the steam that would have been generated by one of the primary boilers had it been able to operate. The three primary boilers are scheduled to undergo maintenance over the next four years to reduce the downtime that they have been experiencing. The maintenance plan is as follows:

- Fiscal Year 2024: Replace rear water wall in Boiler A and Boiler B
- Fiscal Year 2025: Replace four water walls, roof tubes, and superheater in Boiler C. Replace economizer, grate, and generator bank tubes in Boiler A.
- Fiscal Year 2026: Replace three water walls, roof tubes, and superheater in Boiler A. Replace economizer, grate, and generator bank in Boiler B.
- Fiscal Year 2027: Replace three water walls, roof tubes, and superheater in Boiler B. Replace economizer, grate, and generator bank in Boiler C.

The maintenance items are primarily the pressure-containing parts of the boilers, excluding the steam drums. The maintenance of the cogeneration boilers is not intended to restore lost short-term (hourly) steam production capacity. The steam needs of the sugar mill and power production call for 330,000 lb/hr of steam from each of the three cogeneration boilers. Recent stack testing has shown that the boilers are capable of generating that amount of steam and the tested rates have not varied significantly, or decreased, over time. The table below summarizes the steam rate that each boiler has tested at over the last 5-year period, as well as the total steam produced for the year and the average steam rate for the year in lb/hr:

Test Year	Steam Rate (lb/hr) During Stack Testing				
	Boiler A	Boiler B	Boiler C		Average Steam (lbs/hr)
2019	372,600	324,800	364,133		353,844
2020	372,600	364,467	362,033		366,367
2021	358,000	360,300	355,000		357,767
2022	356,633	327,633	364,867		349,711
2023	366,433	356,300	319,933		347,556

The proposed package boiler is intended to be used primarily when one of the cogeneration boilers is down for maintenance. The boiler will be a natural-gas fired boiler with a maximum design heat input rate of 337.7 MMBtu/hr, capable of producing 250,000 lb/hr of steam at a temperature of 650ºF at 550 psig. The proposed boiler is manufactured by Cleaver Brooks (Model NB-081D-125-550-AL-LH) and has a flue gas recirculation (FGR) system

and a selective catalytic reduction (SCR) system with ammonia injection for NO_x emissions control. The SCR system is not required but will be available in case it is needed for NO_x emission reductions.

As stated previously, the primary purpose of the boiler is to provide steam for the sugar mill and refinery when one of the primary cogeneration boilers are down for maintenance, however there may be times when the boiler is needed to operate while the three primary cogeneration boilers are also operating, for example during startup or shutdown, or reduced load operation. The proposed boiler will not send steam to the onsite turbine generators, but instead only to the sugar mill and refinery (a process flow diagram of the proposed steam connections is included in Appendix A of the Air Construction Application submitted to DEP). NHPC is proposing to limit the operating time of the proposed boiler to 1,485 hours per year while the three existing cogeneration boilers are also operating. The air application requests that the proposed boiler have no other limitation on operating hours.

ATTACHMENT B

Technical Memorandum

MILLER ENGINEERING
ENGINEERING & CONSTRUCTION SERVICES

TECHNICAL MEMORANDUM

Subject:	**Stormwater Management Evaluation**
Re:	NHPC– Okeelanta Co-generation Plant – Proposed Package Boiler
Permit:	Site Certification PA 04-46D
From:	Glen A. Miller, P.E. lic #39242
To:	Florida DEP Review staff
Date:	July 20, 2023

Glen A Miller
Digitally signed by Glen A Miller
DN: cn=Glen A Miller, o=Miller Engineering, ou, email=glen@miller-engineer.com, c=US
Date: 2023.07.21 15:17:52 -04'00'

This memorandum presents an evaluation of the package boiler that New Hope Power Company (NHPC) has proposed (Boiler D) and any potential impact its installation or operation could have on the quantity and quality of stormwater at the certified site. Figures 1 and 2 are attached. Figure 1 shows the Stormwater Management Plan for the site with a current (2021) aerial. Figure 2 is an enlarged plan of the existing boilers and also depicts the plan for installation of the new package boiler, including concrete slabs to be installed for the unit and its mechanical and electrical auxiliaries.

The existing stormwater plan control structures direct stormwater from the Detention Basins to a duplex pump station (ex. Biomass Sump Pump Sta.). The system is designed so that stormwater is pumped (when the 11.5 ft. control elevation is reached), into the industrial wastewater pipeline that carries facility wastewater and stormwater to the percolation ponds approximately 1 mile south of the power plant facility and biomass storage parcels. This permitted land application system is authorized in the Conditions of Certification (Specific Condtion I.A.2.) and consists of four percolation ponds of approximately 150 acres each. This combined system is an integrated stormwater and wastewater management system that is permitted and monitored under the state industrial wastewater rules. The facility does not discharge any stormwater to surface waters.

The proposed package boiler and auxiliary equipment (e.g., feedwater pump, piping, valves and electrical components) will be installed next to the existing bagasse boilers. The existing base is compacted shellrock fill. The package gas boiler will operate in a backup capacity, substituting for an existing bagasse boiler being out of service for repair or rehabilitation. Therefore, the only impact on the stormwater management system will be any additional runoff flows due to an increase in impervious area. The current ground elevation is close to the slab elevations required for the boiler so that storage for a 100 yr rain event will not be affected by installation or operation of the package boiler.

Major considerations and findings of the stormwater evaluation include:

- The boiler installation will result in a total new concrete slab area of approximately 6,361. To make room for the new installation, there is the removal of a fuel oil storage tank and surrounding impervious secondary containment area, which is a deduction of 3,250 sf of

impervious area offsetting the new slab construction. Therefore, there will be a net increase in impervious area of 2,841 sf (0.065 ac). This 0.065 acre net change will increase the total impervious area from 5.95ac to 6.015 ac for the facility.

- The existing ground surface in the area where the new boiler will be located is hard, compacted shellrock/gravel. The new installation will have a very small impact to soil storage for the site. The "c" value (runoff coefficient) for the existing compacted shellrock surface is estimated at 0.80, which is quite near concrete with a coefficient of 0.95-1.0. Therefore, most of the area, while technically classified as "pervious", is in fact not pervious in most conditions due to its dense compaction. The nominal difference in runoff coefficient results in maximum potential increase in runoff quantity being very small. Therefore, these very small changes with the installation of the new package boiler are not projected to generate significant new stormwater runoff to a measurable degree.

In conclusion, as discussed above, the package boiler installation as proposed at the Okeelanta Cogeneration Facility should not have any adverse impacts on the quantity of stormwater generated, or the treated stormwater quality.

END OF MEMO

AREA NOT PART OF SMA

0.96 ac (north basin 1 area)

EX. DET. BASIN BERM, MIN. EL. 15.0

EX. DETENTION BASIN 1
(3.98 AC)

MATCHLINE

MATCHLINE (SEE BELOW)

EX. BASIN #1
CONTROL STRUCTURE

EX. 18" CULVERT TO
ROAD DRAINAGE DITCH

ROAD DRAINAGE DITCH

FIRE WATER CANAL

MIN. EL. 13.5
ALONG EAST BANK
CANAL, TYP.

COOLING TOWER

FPL
SUBSTATION

ADMIN.

DITCH

FACILITY
STORMWATER
PERIMETER

EX. IWW SUMP PUMP
STA. - 2 PUMPS EA.
1500 GPM@260'TDH
FLOWMETER FM-1

CANAL BANK
MIN EL 13.5, TYP.

BOILER BLDG.

IWW

SEE ENLARGED FIG 2

WOOD STORAGE AREA

BASIN 3A (2.79 AC)

EX. SLIDE GATE
ON CULVERT

EX. BIOMASS SUMP PUMP STA.
2 PUMPS EA. 500 GPM@200'TDH,
FLOWMETER FM-2
LEVEL SET POINT: LEAD ON EL 11.5
LAG ON 12.0
HIGH ALARM 13.0

EX. PIPELINE

24"
CMP

EX. SLIDE GATE
ON CULVERT

FARM FIELD

DITCH

EX. PIPELINE

EX. STORM INLET

EX. BASIN #2
CONTROL STRUCTURE

EX. 18" CULVERT TO DR. SWALE

EX. DETENTION BASIN NO. 2
(2.67 AC)

END OF ROAD
DRAINAGE DITCH

EX. SWALE

EX. STORM INLET

EX. DET. BASIN BERM
(MIN ELEV 15.0)

1.77 ac (south basin 2 area)

CULVERT

FIRE WATER CANAL

FARM CANAL

END FIRE WATER CANAL

IWW PIPELINE TO
PERCOLATION PONDS

FILL PLUG

EX. FIRE WATER CANAL

MIN. EL. 13.5,
U.O.N., TYP.

MIN. EL. 13.5,
U.O.N., TYP.

BAGASSE STORAGE AREA

EX. FIRE WATER CANAL

EX. FIRE WATER CANAL

FILL PLUG

FARM CANAL

OKEELANTA MAIN ROAD

CULVERT REMOVED
AND PLUGGED

CENTER CANAL

CANAL BLOCK (ex)

CANAL BLOCK (ex)

FIRE WATER CANAL

MIN. FIRE WATER
CANAL BERM EL
13.5, TYP.

EX. CULVERT

EX. FIRE WATER
PUMP STA AT CANAL BERM

EX. CULVERT

COGEN ACCESS ROAD

FIRE WATER CANAL

FARM CANAL

ROAD DRAINAGE DITCH

ROAD DRAINAGE DITCH

BASIN 3B (2.39 AC)

FARM FIELD (OFFSITE)

MATCHLINE

MATCHLINE (SEE BELOW)

NO.	DATE	REVISION	BY

Designed GAM 7/23
Drawn GAM 7/23
Checked GAM 7/23

APPROVED BY: GLEN A. MILLER, P.E.

_____ DATE _____

REGISTERED ENGINEER NO. 39242
CORPORATE NO. 6935

MILLER ENGINEERING
ENGINEERING AND ENVIRONMENTAL SERVICES
PALM BEACH COUNTY, FLORIDA

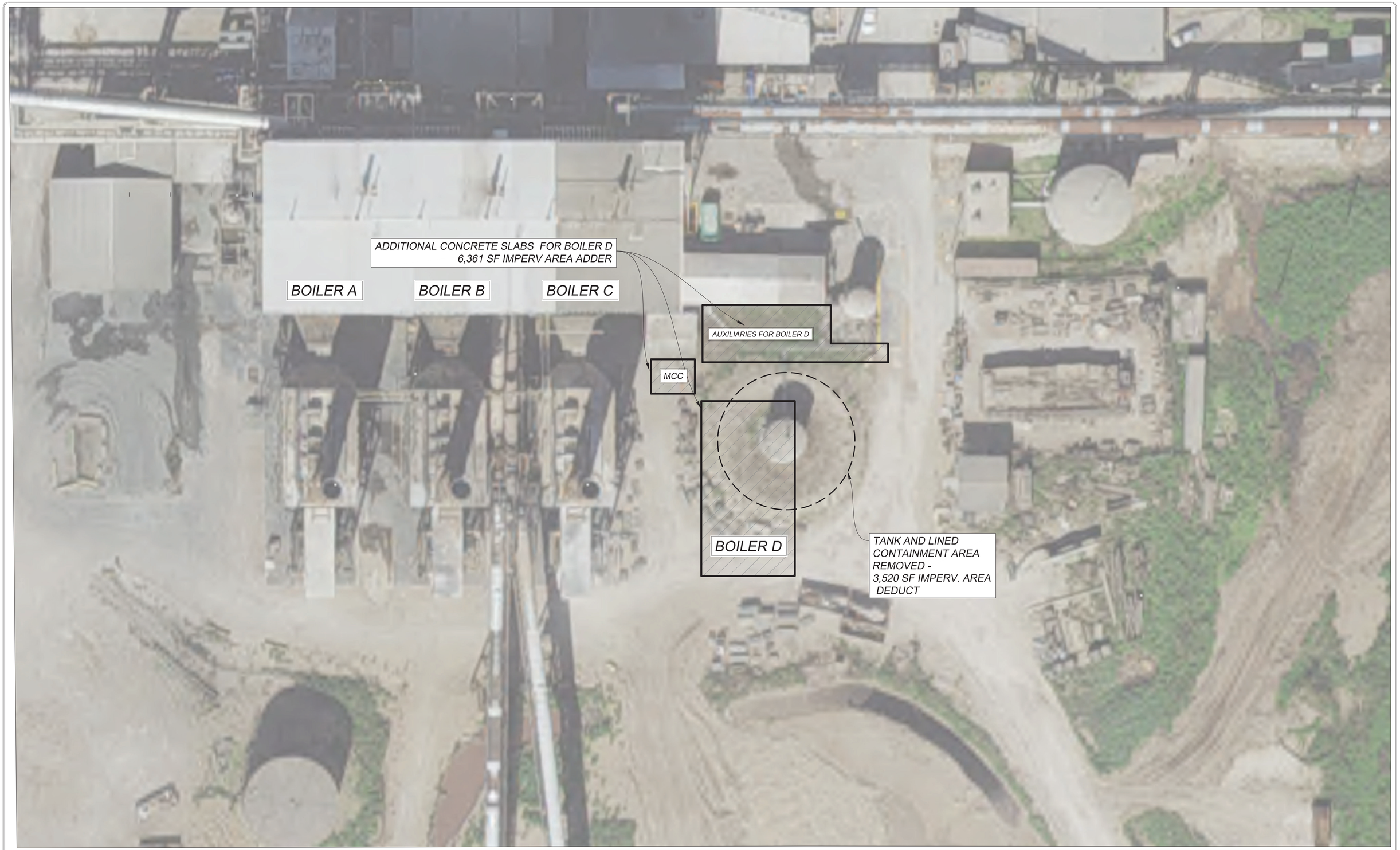
NEW HOPE POWER COMPANY
SOUTH BAY, FL

FIG 1 - SITE PLAN
STORMWATER MANAGEMENT
OKEELANTA COGENERATION PLANT

SCALE: 1"=100'

PROJECT NUMBER: 23104.01

SHEET NO.: 1



NO.	DATE	REVISION	BY

Designed GAM 7/23
Drawn GAM 7/23
Checked GAM 7/23

APPROVED BY: GLEN A. MILLER, P.E.
_____ DATE _____
REGISTERED ENGINEER NO. 39242
CORPORATE NO. 6935

MILLER ENGINEERING
ENGINEERING AND ENVIRONMENTAL SERVICES
PALM BEACH COUNTY, FLORIDA

NEW HOPE POWER COMPANY
SOUTH BAY, FL

FIG 2 - INSTALLATION PLAN BOILER D
OKEELANTA COGENERATION PLANT

SCALE	PROJECT NUMBER	SHEET NO.
1"=20'	23104.01	2