



MALCOLM PIRNIE, INC. ENVIRONMENTAL ENGINEERS, SCIENTISTS & PLANNERS

October 19, 1992

Susan M. Coughanour Senior Review Coordinator South Florida Water Management District 3301 Gun Club Road West Palm Beach, FL 33416-4680

Re:

Lee County Solid Waste Energy Recovery Facility

Power Plant Site Certification - DER Case No. PA 90-30

Fort Myers, FL

Subject: RESPONSE TO FIRST SUFFICIENCY QUESTIONS

Dear Ms. Coughanour,

On behalf of Lee County, Florida (the "County"), Malcolm Pirnie is submitting additional information in response to the South Florida Water Management District's First Sufficiency Questions/Comments letter dated 30 September 1992. This response is also being forwarded to each of the parties identified on the attached distribution list.

As we have discussed, the Lee County Division of Solid Waste is seeking the Board of County Commissioners (the "Commission") approval to authorize Ogden Martin Systems of Lee Inc. (the "Company") to commence construction of the Lee County Solid Waste Resource Recovery Facility (the "Facility). This request for approval is currently scheduled as an Administrative Agenda item for the Commission's Wednesday 21 October 1992 public meeting. It is anticipated that Commission approval will be granted on this date and that formal Notice to Proceed will be issued by the County Administrator or his designated representative on or before 31 October 1992. The Company anticipates clearing and grubbing operations to commence immediately following issuance of Notice to Proceed.

The County is grateful for the thoroughness of South Florida Water Management District's previous review and appreciates the expeditious and professional manner in which County submissions have been handled. We must again, however, respectfully request that the South Florida Water Management District expedite its review of this submittal in order that the County can maintain the current project schedule.

If we may be of any assistance during your review, or need to provide additional information, please do not hesitate to contact us.

Very truly yours,

MALCOLM PIRNIE, INC.

Donald R. Markley

Assistant Project Manager





October 19, 1992 Page 2

# DISTRIBUTION LIST RESPONSE TO FIRST SUFFICIENCY QUESTIONS

Chip Merriam, SFWMD - Ft. Myers Jim Winter, Lee County Parks and Recreation Lindsey Sampson, Lee County Solid Waste Larry Johnson, Lee County Solid Waste Jim Yaegar, Lee County Attorney David Owen, Lee County Assistant Attorney Walter Stephens, Lee County Div. of Water Resources David Dee, Esquire, Carlton, Fields, Ward, et al. Hamilton S. Oven, Jr., DER-Tallahassee Philip Barbaccia, DER-Fort Myers Wayne Daltry, Southwest Florida R.P.C. Ken Plante, General Counsel, DNR James V. Antista, Esquire, Game & Fish Comm. Steve Pfeifer, General Counsel, DCA Dan Craig, Ink Engineering Craig Smith, Kevin Erwin Inc. L. P. Young, OMSL Jeff Kowal, OMSL R. Lane Ware, UE&C David S. Cerrato, Malcolm Pirnie



#### **RESPONSES TO**

### SFWMD REQUESTS FOR ADDITIONAL INFORMATION

**FOR** 

# LEE COUNTY SOLID WASTE ENERGY RECOVERY FACILITY POWER PLANT SITING ACT APPLICATION PA 90-30

OCTOBER 1992

1. Pursuant to Certification Condition XV.D.2.b.(6), please provide a timetable for accomplishing the proposed mitigation activities prior to or concurrent with the construction of the proposed power plant facilities and any associated wetland impacts.

Response: A wetland construction schedule prepared by Kevin L. Erwin Consulting Ecologist, Inc. (based on a November 1, 1992 notice to proceed) is attached.

2. Pursuant to Certification Condition XV.D.2.b.(7), please submit documentation that the mitigation and preserved wetland areas (including buffer zones) have been legally reserved and will be managed consistent with their proposed use as conservation areas. Please note that a draft conservation easement or similar legal instrument must be reviewed and approved in order for the SFWMD to authorize commencement of construction.

Response: Documentation for the legally reserved mitigation and preserved wetland areas (including buffer zones) is attached (Draft copy reviewed by SFWMD). These documents will be recorded after board authorization and signature.

3. The documentation submitted by United Engineers and Constructors on September 28, 1992 in response to the District's request for additional information on the proposed surface water pumps is complete except for the diameter of the proposed pumps. Please provide. "Item (3) is related to OMSL's August 25, 1992 submittal of the referenced Facility's storm water management and dewatering plans. The documentation submitted by United Engineers and constructors on September 28, 1992 in response to the District's request for additional information on the proposed surface water pumps is complete except for the diameter of the proposed pumps. Please provide." (Ogden Martin Systems, 9-30-92)

Response: Refer to Ogden Martin Systems of Lee Inc. letter dated October 14, 1992. (attached)

4. In a meeting with the applicant's consultants on September 16, 1992, the possibility of drilling fewer than the six previously authorized production wells was discussed. The proposed wells would have larger capacities than was authorized in the Certification Order and would be installed in different locations. In order to consider this option, it must be demonstrated that no adverse impacts are associated with this configuration. Pursuant to Certification Condition XV.B.3.d, please submit an evaluation of the impacts of the proposed pumpage from the proposed well locations on adjacent existing legal users, pollution sources, environmental features, the saline water interface, and water bodies for review and approval by SFWMD.

Response: Refer to Ogden Martin Systems of Lee Inc. letter dated October 14, 1992. (attached)

5. SFWMD staff has reviewed the letter from Mr. Walter Stephens, Director, Lee County Water Resources Division, regarding the routing of the project's surface water discharges to Six Mile Cypress via the S.R. 82 roadside swale/ditch. Please provide confirmation from the County Attorney's Office that this proposal is consistent with the Six Mile Cypress Drainage Basin Ordinance and that no further authorization by the County is necessary.

Response: Documentation provided by the County Attorney's office stating that routing of the projects surface water discharges to the Six Mile Cypress Slough via the Buckingham/SR82 roadside swale/ditch is in accordance with the conditions and requirements of the Lee County Six-Mile Cypress Watershed Ordinance is attached.

6. Please Provide confirmation from DOT that the proposed improvements are acceptable to them. What measures will be taken to ensure that additional connections to the Buckingham Rd./S.R. 82A and S.R. 82 roadside swales/ditches will not adversely impact the capacity of these ditches to convey runoff from the LCERF project site.

Response: Refer to attached letters from Ink Engineering and Lee County Water Resources Division/Lee County D.O.T. confirming their concurrence with the proposed improvements.

7. Please provide a drawing which shows the proposed final improved cross section of the Buckingham Rd./S.R. 82A and S.R. 82 roadside swale/ditches.

Response: See attached sketch/drawing prepared by Ink Engineering showing the final improved cross section of the roadside swale/ditch.

8. Please indicate when the FPL temporary access road, which is currently blocking the Buckingham Rd./S.R. 82A roadside swale/ditch, will be removed or culverted to ensure conveyance of runoff from the LCERF project site.

Response: Refer to attached letter prepared by Ink Engineering discussing the schedule for the required improvements.

# Kevin L. Erwin Consulting Ecologist, Inc. — Ecologists • Biologists • Computer Scientists—

#### WETLAND CONSTRUCTION SCHEDULE\*

- 1. Baseline monitoring shall be completed prior to January 1, 1993. The report will be submitted within 60 days of data collection.
- 2. The initial removal/treatment of exotic vegetation shall be initiated prior to February 1, 1993. The initial treatment will be completed within 60 days.
- 3. Construction of the 3.8 acre wetland creation area will be completed prior to March 15, 1993.
- 4. Planting of the 3.8 acre wetland creation area will be completed prior to May 1, 1993.
- 5. Time zero monitoring will be initiated within 30 days of completion of the initial exotic removal and completion of the created wetland planting (i.e., later than June 1, 1993). The report will be submitted within 60 days of data collection.
- 6. Semi-annual monitoring will occur each Setember November and April May following the time zero monitoring. The annual report will be submitted within 60 days of fall data collection.
- \* This schedule is based on an anticipated notice-to-proceed date of November 1, 1992. Should this notice be dalayed, all wetland mitigation activity will be similarly delayed.

This Instrument Prepared	l by:				
Lee County	<del></del>				
P. O. Box 398 Fort Myers, Florida 339	002-0398				
Parcel:					
Project:					
STRAP No.:		m) t =	<b>2</b>	<b>.</b>	<b>5</b>
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#### GRANT OF PERPETUAL

#### CONSERVATION EASEMENT & AGREEMENT

of \_\_\_\_\_\_\_, 1992 by and between LEE COUNTY, a political subdivision of the State of Florida ("GRANTOR"), and the SOUTH FLORIDA WATER MANAGEMENT DISTRICT, a political corporation of the State of Florida, created under Chapter 373, Florida Statutes, and whose principal address is 3301 Gun Club Road, West Palm Beach, Florida 33406, ("GRANTEE").

Pursuant to the provisions of Section 704.06, Florida Statutes, and in consideration for the issuance of a State of Florida Power Plant Site Certification issued to Lee County on June 16, 1992, and the conditions therein, specifically Condition XV.D.2.b.(7) and c.(6), GRANTOR hereby grants to GRANTEE, a Perpetual Conservation Easement over the real property as described in Exhibit "A" of this Easement and Agreement (the "Property"), for itself, its successors and assigns.

7. There shall be no uses detrimental to the preservation of any wetlands within the Property.

GRANTOR agrees that it will not sell the Property which is subject to this Easement without giving GRANTEE at least sixty (60) days written notice prior to transfer of title.

GRANTOR reserves to itself, its heirs, successors or assigns all rights as fee owner of the Property including the right to engage in all uses of the Property that are not expressly prohibited herein and are not inconsistent with the purpose of this Easement as set forth in Section 704.06, Florida Statutes.

GRANTEE agrees that it will hold this Easement exclusively for conservation purposes and that it will not assign its rights and obligations under this Easement except to another organization qualified to hold such interests under applicable state and federal laws and committed to holding this Easement exclusively for conservation purposes.

GRANTOR agrees to bear all reasonable costs related to the operation, upkeep and maintenance of the Property.

If any provision of this Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this Easement, and the applications of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

All notices, consents, approvals or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to

the appropriate party or successor-in-interest, at the addresses above set forth or such new addresses as either party may in writing deliver to the other.

It is agreed between GRANTOR and GRANTEE that GRANTEE'S approval of the management plan and amendments thereto, and written requests of GRANTOR, will be based upon consideration of water resource management and conservation policies as expressed in Chapter 373, Florida Statutes.

This Easement and Agreement may be modified only by mutual written agreement between GRANTOR and GRANTEE or their successors, at and for the convenience of the parties.

# 

Title:

Office of Lee County Attorney
By: Assistant County Attorney
ADDROVED AS NO FORM.
APPROVED AS TO FORM: Office of General Counsel,
South Florida Water Management District
By:
Assistant General Counsel

APPROVED AS TO FORM:

ENGINEERS

SURVEYORS

PLANNERS'

PHONE (813) 995-8500

6320 BEAU DRIVE

NORTH FORT MYERS, FLORIDA 33903

#### EXHIBIT A-1

JOB NUMBER 9133 9/30/92

LEE COUNTY ENERGY RECOVERY SITE CONSERVATION EASEMENT # 1

#### DESCRIPTION

A TRACT OR PARCEL OF LAND LYING IN THE SOUTHEAST ONE-QUARTER OF SECTION 24, TOWNSHIP 44 SOUTH, RANGE 25 EAST, LEE COUNTY, FLORIDA; MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE POINT OF COMMENCEMENT AT THE SOUTHWEST CORNER OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 24; THENCE N.88°44'55"E. FOR 250.01 FEET ALONG THE SOUTH LINE OF SAID SOUTHEAST ONE-QUARTER TO AN INTERSECTION WITH THE EASTERLY LINE OF A FLORIDA POWER AND LIGHT COMPANY RIGHT-OF-WAY AS RECORDED IN OFFICIAL RECORD BOOK 814, AT PAGE 673 OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA; THENCE N.00°45'41"W. FOR 803.69 FEET ALONG SAID EASTERLY LINE TO THE POINT OF BEGINNING.

FROM SAID POINT OF BEGINNING; THENCE CONTINUE N.00°45'41"W. FOR 573.85 FEET; THENCE N.65°11'55"E. FOR 408.42 FEET; THENCE N.55°28'14"E. FOR 170.76 FEET; THENCE N.65°34'06"E. FOR 302.55 FEET; THENCE N.74°57'35"E. FOR 294.17 FEET; THENCE N.70°53'57"E. FOR 149.54 FEET; THENCE S.73°15'50"E. FOR 87.58 FEET; THENCE S.00°00'00"E. FOR 142.08 FEET; THENCE S.31°57'24"E. FOR 58.29 FEET; THENCE S.58°14'35"E. FOR 165.73 FEET; THENCE S.17°43'13"W. FOR 214.51 FEET; THENCE S.89°02'10"W. FOR 185.17 FEET; THENCE S.51°30'52"W. FOR 272.87 FEET; THENCE S.76°58'18"W. FOR 258.63 FEET; THENCE S.00°00'00"E. FOR 217.78 FEET; THENCE S.22°30'00"W. FOR 103.32 FEET; THENCE S.67°30'00"W. FOR 103.32 FEET; THENCE S.90°00'00"W. FOR 609.31'TO THE POINT OF BEGINNING.

CONTAINING 21.005 ACRES MORE OR LESS.

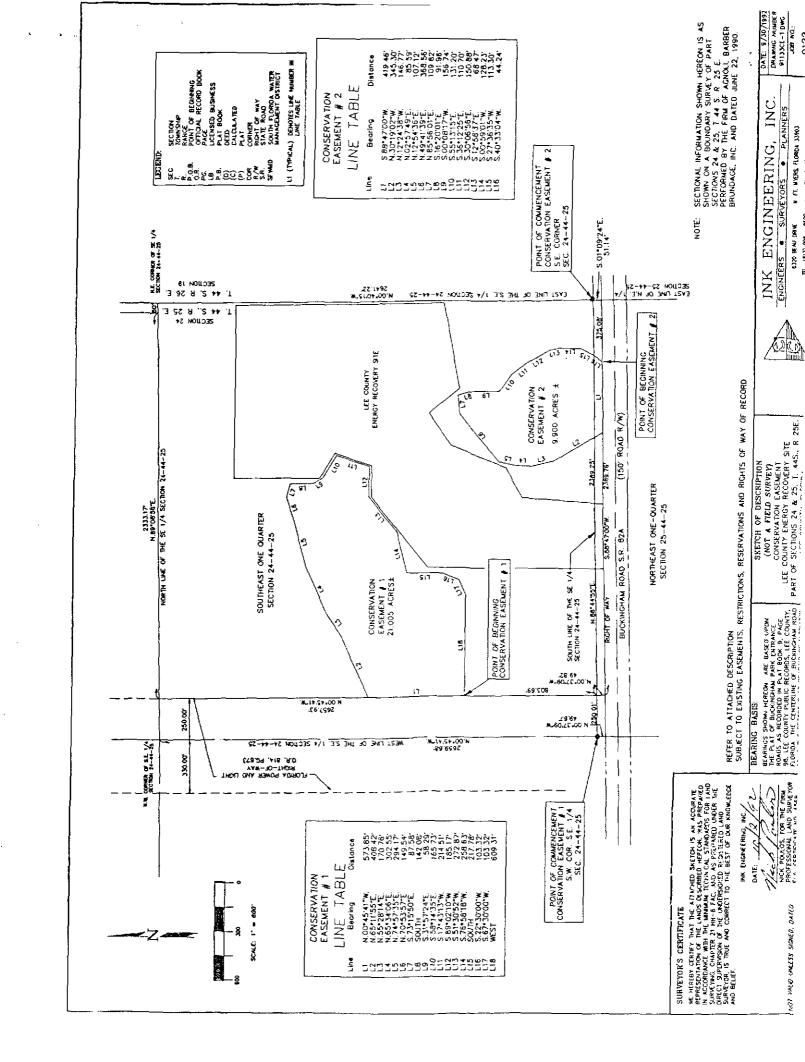
THE BEARINGS MENTIONED HEREIN ARE BASED UPON THE PLAT OF BUCKINGHAM PARK ENTRANCE ROADS AS RECORDED IN PLAT BOOK 9, PAGE 98, LEE COUNTY PUBLIC RECORDS, LEE COUNTY, FLORIDA. THE CENTERLINE OF BUCKINGHAM ROAD BEING THE RECORD PLAT BEARING OF N.88°47'W.

SUBJECT TO EXISTING EASEMENTS, RESTRICTIONS, RESERVATIONS, AND RIGHTS OF WAY OF RECORD.

REFER TO 8 1/2" X 11" SKETCH

INK ENGINEERING, INC.

NICK POULOS, FOR THE FIRM PROFESSIONAL LAND SURVEYOR FLORIDA CERTIFICATE NO. 4568



SURVEYORS

PLANHERS

PHONE (813) 995-8500

6320 BEAU DRIVE

NORTH FORT MYERS, FLORIDA 33903

#### EXHIBIT A-2

JOB NUMBER 9133 9/30/92

LEE COUNTY ENERGY RECOVERY SITE CONSERVATION EASEMENT # 2

#### DESCRIPTION

A TRACT OR PARCEL OF LAND LYING IN THE SOUTHEAST ONE-QUARTER OF SECTION 24, TOWNSHIP 44 SOUTH, RANGE 25 EAST, AND THE NORTHEAST ONE-QUARTER OF SECTION 25, TOWNSHIP 44 SOUTH RANGE 25 EAST, LEE COUNTY, FLORIDA; MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE POINT OF COMMENCEMENT AT THE SOUTHEAST CORNER OF SAID SECTION 24; THENCE S.01°09'24"E. FOR 51.14 FEET ALONG THE EAST LINE OF SAID NORTHEAST ONE-QUARTER OF SAID SECTION 25 TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY OF BUCKINGHAM ROAD (S.R. 82A); THENCE S.88°47'00"W. FOR 375.08 FEET ALONG SAID NORTHERLY RIGHT OF WAY (75.00 FEET FROM CENTERLINE) TO THE POINT OF BEGINNING.

FROM SAID POINT OF BEGINNING; THENCE CONTINUE S.88°47'00"W. FOR 419.46 FEET; THENCE N.30°19'02"W. FOR 345.30 FEET; THENCE N.12°24'38"W. FOR 146.77 FEET; THENCE N.02°57'49"E. FOR 85.59 FEET; THENCE N.12°54'36"E. FOR 107.12 FEET; THENCE N.49°41'39"E. FOR 368.56 FEET; THENCE N.85°56'01"E. FOR 109.82 FEET; THENCE S.16°20'01"E. FOR 91.96 FEET; THENCE S.00°08'17"W. FOR 156.74 FEET; THENCE S.55°13'15"E. FOR 131.20 FEET; THENCE S.36°12'25"E. FOR 110.70 FEET; THENCE S.30°06'56"E. FOR 150.88 FEET; THENCE S.12°58'37"E. FOR 68.47 FEET; THENCE S.00°59'01"W. FOR 128.23 FEET; THENCE S.27°36'35"W. FOR 113.30 FEET; THENCE S.40°33'04"W. FOR 44.24 FEET TO THE POINT OF BEGINNING.

CONTAINING 9.900 ACRES MORE OR LESS.

THE BEARINGS MENTIONED HEREIN ARE BASED UPON THE PLAT OF BUCKINGHAM PARK ENTRANCE ROADS AS RECORDED IN PLAT BOOK 9, PAGE 98, LEE COUNTY PUBLIC RECORDS, LEE COUNTY, FLORIDA. THE CENTERLINE OF BUCKINGHAM ROAD BEING THE RECORD PLAT BEARING OF N.88°47'W.

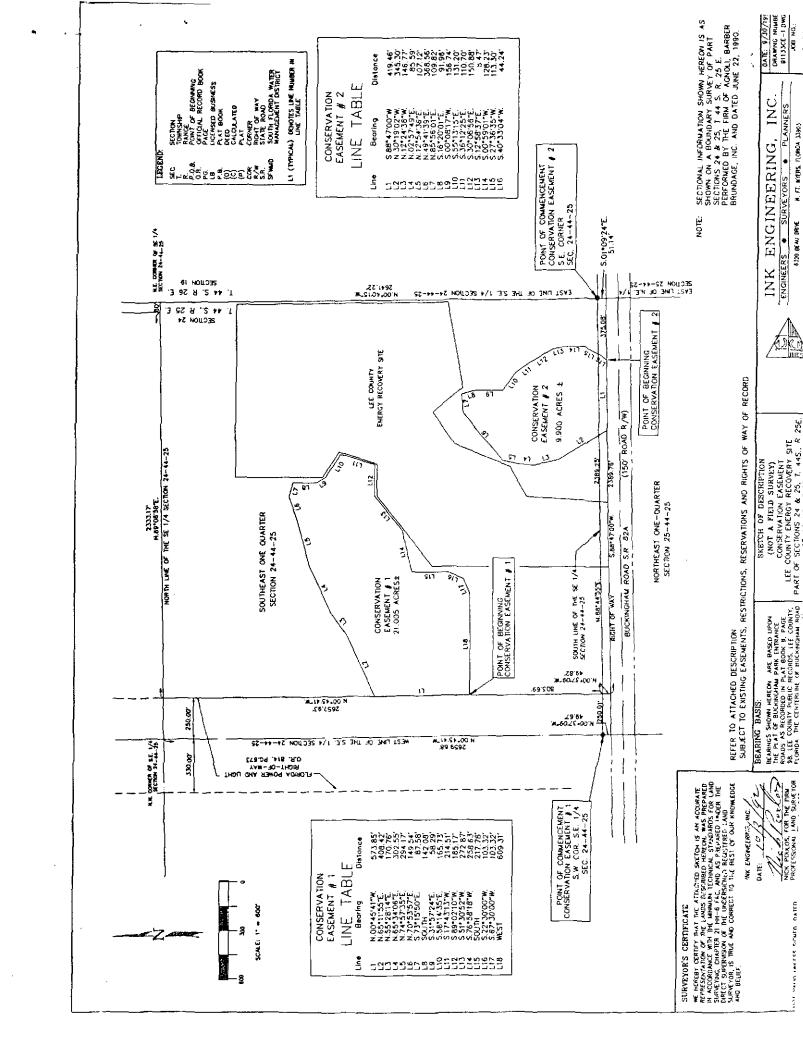
SUBJECT TO EXISTING EASEMENTS, RESTRICTIONS, RESERVATIONS, AND RIGHTS OF WAY OF RECORD.

REFER TO 8 1/2" X 11" SKETCH

INK ENGINEERING, INC.

NICK POULOS, FOR THE FIRM PROFESSIONAL LAND SURVEYOR

FLORIDA CERTIFICATE NO. 4568



# OGDEN MARTIN SYSTEMS OF LEE, INC.

40 LANE ROAD CN 2615 FAIRFIELD, NJ 07007-2615 (201) 882-9000



Telecopied on 10/14/92

October 14, 1992

South Florida Water Management District 3501 Gun Club Road West Palm Beach, Florida 33416-4680

Attention: Susan M. Coughanour

Senior Review Coordinator

Reference: Lee County Resource Recovery Facility

Ft. Myers, Florida

Project E-1033, Our Ref. LE0123L

Subject: RESPONSE TO FIRST SUFFICIENCY QUESTIONS

Dear Susan,

Ogden Martin Systems of Lee, Inc. (OMSL) has received and reviewed your sufficiency letter dated September 30, 1992. As you noted, item (3) is related to OMSL's August 25, 1992 submittal of the referenced Facility's storm water management and dewatering plans. Our response is provided on the attached sheet. The balance of questions/comments listed relate to project scope outside of OMSL's submittal and the Facility boundary and shall be addressed separately by Malcolm Pirnie.

Item (4) requesting an evaluation of the impacts of the proposed pumpage from the proposed production well locations will also be addressed under separate cover at a later date. OMSL is currently proceeding with Ardaman & Associates, located in Orlando and Ft. Myers, to provide a full drawdown impact analysis based on a two (2) well system with wells located within the Facility Site fencing. We will forward this information as soon as it becomes available. Since the production wells are not related to the Facility's storm water management system or dewatering plans we trust the District's approval of these submitted plans will not be delayed due to pending information on the production wells.

pja/2419

OMSL respectfully requests the District's prompt approval of OMSL's proposed Facility storm water management and dewatering plans based on this supplemental response. We again thank you for your and your staff's attention and cooperation regarding this important Lee County project.

Very truly yours,

L. Peter Young

Project Manager

oc: L. Sampson - Lee County

P. Barbaccia - FDER, Ft. Myers

D. Markley - Malcolm Pirnie D. Cerrato - Malcolm Pirnie

J. Kowal - OMSL

J. Treshler - OMSL

L. Ware - UE&C pf 5.1 SFWMD

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#### LEE COUNTY SOLID WASTE RESOURCE RECOVERY FACILITY

South Florida Water Management District Response to First Sufficiency Questions/Comments

#### Water Use

Item (3)

Questions/Comments: The Documentation submitted by United Engineers and Constructors on September 28, 1992 in response to the District's request for additional information on the proposed surface water pumps is complete except for the diameter of the proposed pumps. Please provide.

Response: The dewatering pump diameter is 8 inches.

#### **BOARD OF COUNTY COMMISSIONERS**

P.O. Box 398 Fort Myers, Florida 33902-0398 (813) 335-2111

(813) 335-2236

Writer's Direct Dial Samber

John F. Manning District One

Douglas R. St. Cerny District Pari

Ray Judah District Univer

Nicki Lopez-Wolte District Kur

Donald Slisher District Five

Julio Avael County Almanistrator

James G. Yacger County Attorney

Robert E. Sphit County Hearing Examiner October 12, 1992

Susan M. Coughanour
Senior Review Coordinator
Regulation Department
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33116-4680

RE: LEE COUNTY SOLID WASTE RESOURCE RECOVERY FACILITY, FIRST SURFICE REVIEW: SURFACE WATER MANAGEMENT

Dear Ms. Couchangur:

Pursuant to your letter of September 30, 1992, to Mr. Peter Young of Ogden-Martin Systems of Lee, Inc., and in particular reference to your Request Number 5., "Surface Water Management", I am of the following opinion:

This office has had the opportunity to review the memorandum of June 8, 1992 from Mr. Walter Stephens, Director of the Lee County Division of Water Resources, and the conditions, limitations and requirements of Lee County Ordinance No. 83-5, as amended, and as codified in the Lee County Code of Ordinances at Section 59.

As the result of this review, and from the legal perspective, it is the position of this office that the determinations and recommendations made by Mr. Walter Stephens in his memorandum, are consistent with the conditions and requirements of the Lee County Six-Mile Cypress Watershed Ordinance.

Also, and again from the legal perspective, it is the position of this office that no further authorization is required from the County at this time for the proposed stormwater outfall for the County's resource recovery facility.

Susan M. Coughanour October 12, 1992 Page -2-

If you require any further input relative to this issue, please so advise at your convenience.

The response and proposed documents relative to your Question Number 2., "Wetlands", have been provided to you under separate cover.

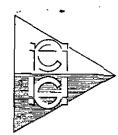
Cordially

James G. Yaeger County Attorney

JGY:dm

Enclosure

xc: Board of County Commissioners
Julio Avael, County Administrator



#### ENGINEERS

#### SURVEYORS

PLANNERS

6320 BEAU DR. • N. FT. MYERS, FL 33903 • (813) 995-8500 • FAX (813) 997-3407

October 19, 1992 Job Number 9133.07

Mr. Don Markley
Malcolm Pirnie, Inc.
c/o Ink Engineering, Inc.
6320 Beau Drive
N. Ft. Myers, FL 33903

RE: Lee County Solid Waste Energy Recovery Facility

Dear Mr. Markley:

As per your request, we have reviewed the surface water Items 6-8 in the 9-30-92 SFWMD sufficiency review letter. Our response to these requests for additional information is as follows:

Item #6. Enclosed please find a letter from Lee County Water Resources indicating the proposed swale improvements are acceptable to them. Please note Water Resources responded to this issue for the DOT at the DOT's request.

In regard to any future connections impacting the roadside swale, this must be regulated by the SFWMD and the County. Only they have the authority to allow connections into the Buckingham Road swale. If a future connection is allowed, one would assume that these agencies would review for the potential impacts and have the perspective development compensate for them accordingly.

- Item #7. Enclosed please find a typical section of the proposed improvements to the Buckingham Road swale. Please note we have also included calculations supporting the swale section.
- Item #8. The FPL temporary access road would be removed or culverted when the swale improvements are made. It is anticipated the swale improvements will be made prior to the dewatering operations at the site. Please note we are currently in the process of discussing this issue with FPL. We fully expect to reach an understanding in the near future with FPL on whether or not they want the accessway to remain.

October 19, 1992 Job Number 9133.07

### Page 2

If you have any questions, please feel free to contact me.

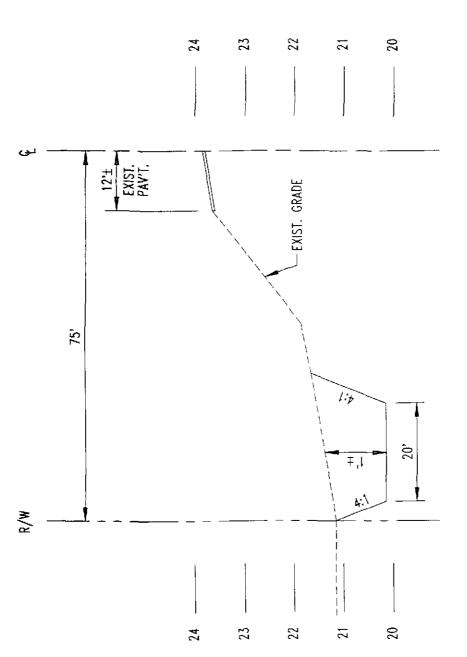
Sincerely, INK ENGINEERING, INC.

Dan Craig, P

DC:1s

Encls.

cc: Dave Cerrato, Malcolm Pirnie



TYPICAL SECTION

TYPICAL SECTION APPLIES FROM SITE OUTFALL TO BOX CULVERT NEAR BUCKINGHAM ROAD & S.R. 82 ALONG THE NORTH SIDE OF BUCKINGHAM ROAD NOTE:

= 20'= 2'SCALE HORIZONTAL VERTICAL

9133

## Trapezoidal Channel Analysis & Design Open Channel - Uniform flow

Worksheet Name: OUTFALL PATH

Comment: BUCKINGHAM SWALE IMPROVEMENTS

Solve For Depth

### Given Input Data:

Bottom Width	20.00 ft
Left Side Slope	4.00:1 (H:V)
Right Side Slope.	4.00:1 (H:V)
Manning's n	0.030
Channel Slope	0.0003 ft/ft
Discharge	18.00 cfs

#### Computed Results:

Depth	0.99 ft 0.76 fps 23.59 sf 27.88 ft 28.13 ft 0.29 ft 0.0203 ft/ft
Froude Number	0.0203 ft/ft 0.15 (flow is Subcritical)

Open Channel Flow Module, Version 3.41 (c) 1991 Haestad Methods, Inc. \* 37 Brookside Rd \* Waterbury, Ct 06708

#### Trapezoidal Channel Analysis & Design Open Channel - Uniform flow

Worksheet Name: OUTFALL PATH

Description: BUCKINGHAM SWALE IMPROVEMENTS

Solve For Depth

#### Given Constant Data;

Variable Input Data Minimum Maximum Increment By

					COMPUTED		COMPUTED	
Bott Widt ft		Z-Right (H:V)	Mannings	Channel Slope ft/ft	Channel Depth ft	= Channel Discharge cfs	Velocity tps	
20.00	4.00	4.00	0.030	0.0003	0.99	18.00	0.76	

FAX (faks)n. short for facsimile. FACSIMILE (faksim'ele)n. 1. exact reproduction or copy 2. the transmission and reproduction of graphic matter by electrical means, as by radio or wire. -SYN COPY FAX (faks)n. short for facsimile. FACSIMILE (faksim'ele)n. 1. exact reproduction or copy 2. the transmission and reproduction

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(faks)n. shorte for facsimile. PACSIMILE (fak sim'e DIVISION le)n. 1. exact OF reproduction NATURAL RESOURCES MGMT or copy 2, the FAX: 813/335-2792 transmission and reproduction graphic matter by electri-10/19/97 DATE: cal means, as by radio or TO: DAN CRAIG TE wire. -SYN COPY FAX FROM: (faks)n. short for facsimile. TELE/EXT. # **FACSIMILE** 335-279/ (fak sim' e ie)n, 1. exact #OF PAGES: reproduction (Including Cover) or copy 2. the transmission and reproduction graphic matter by electrical means, as by radio or wire. -SYN

COPY FAX (faks)n.short for facsimile. FACSIMI LE (fak sim' e le)n. 1. exact reproducti on or copy 2. the transmission and reproducti on of graphic matter electrical means, as by radio or wire. SYN COPY FAX (faks)n. short for facsimile. FAC-SIMILE (fak sim' e le)n. 1. exact reproducti i on or copy 2. the transmission and reproducti on of graphic

electrical means, as by radio or wire. -SYN COPY FAX (faks) n. short for facsimile. FACSIMILE (fak sim' e' le) n. L exact reproduction or copy 2, the transmission and reproduction of graphic matter by electrical means, as by radio or wire. -SYN COPY FAX (faks) n. short for facsimile. FACSIMILE (fak sim' e le) n. 1. exact reproduction or copy 2, the transmission and reproduction of graphic matter by electrical means, FAX (faks) n.

#### M E M O R A N D U M FROM THE DIVISION OF NATURAL RESOURCES MANAGEMENT

To: George Crawford Director, D.O.T. FROM: Roland Ottoline

Professional Engineer II

DATE: October 19, 1992

MEMO: D0072003

RE: Lee County Solid Waste Energy Recovery Facility

In response to the letter of request dated October 14, 1992 from Ink Engineerng, Inc. concerning the proposed improvements to the Buckingham/State Road 82A roadside ditch, we concur with the proposed improvements for the Buckingham/State Road 82A roadside ditch. However, the detailed design drawings with the proposed roadside ditch elevations, grade(s) and culvert invert elevations will need to be submitted for review and approval.

Our review and concurrence is based on the following information submitted:

- 1. "Review Package for Surface Water Management Permit", dated September 1992, submitted to the SFWMD.
- 2. Information contained in the letter dated October 14, 1992 showning the typical cross section.
- 3. Offsite drainage area map submitted on 10-16-92.
- 4. The telephone conversation between yourself and Brad Vance on 10-16-92 concerning some of the parameters used in the design, and the confirmation letter dated 10-19-92.

(Note: That submitted for items 2, 3 and 4 are attached for informational purposes.)

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In regards to additional or future connections to the roadside ditch and their affects, these matters will need to be reviewed on a case-by-case basis. It is our understanding that the proposed improvements are needed and associated with the facility itself. Should other developments impose an additional burden to the roadside ditch, then mitigating or improvements on their behalf will be required.

Additionally, it is not within our jurisdiction to comment on behalf of the Florida Department of Transportation (FDCT) concerning their drainage facilities associated with State Road 82 itself.

Should you have any questions or need any additional information, please contact me at extension 2791.

Enclosures