11-25-83

In order to provide constant monitoring, the following reference electrodes with processor and printer need to be installed at the following sites.

Hadnot Point Plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - pre & post chlorine
Methane presence - Base ment and supernatant rooms
Flow - effluent
Turbidity
DIGESTER TEMP

Camp Geiger plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Methane presence - basement
Flow - effluent
Turbidity
DIGESTER TEMP

Rifle Range Plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Flow - effluent
Turbidity - effluent

Tarawa Terrace plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Methane Presence - Basement
Flow - effluent
Turbidity - effluent
DIGESTER TEMP

Courthouse Bay Plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Flow - effluent
Turbidity - effluent

Camp Johnson plant

pH - Influent and effluent
DO - effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Flow - effluent
Turbidity - effluent

Onslow Beach Plant

pH - Influent and effluent
DO - Effluent
Cl_2 residual - effluent
Cl_2 presence - post Cl_2 room
Flow - effluent
Turbidity - effluent

Monitoring Requirement

Hadnot Point Wastewater System

Plant, BLDG #22

A. Digestor area for presence of Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)

B. Chlorinator room for presence of Chlorine gas. (Alarm)

C. Pump on/off status (4) pumping stations Bldg #21, (4) Bldg #680 and (2) secondary return pumps, (2) filter pumps.

D. Intrusion (Alarm)

E. Power failure (Alarm)

F. Generator failure (Alarm)

G. Digester temperature (6)

Influent

A. P.H.

B. Flow

C. Turbidity

Effluent

A. Dissolved oxygen

B. P.H.

C. Chlorine residual

D. Turbidity

E. Flow

Lift Station, BLDG # S-1761, S-1776, S-1855, S-1055, S-702, S-PT-41, S-34, S-85, H-29, S-47, S-47A, S-1948, S-2633, S-2100, NH-110, S-865 H. 855 Schl, S-46, S-672, LCH-4005, SFC-116, SFC-315, SFC-599, SFC-260, SFC-203, GP-22, S--1455, No number Ord. Pk.

A. Power failure (Alarm)

B. Generator failure (Alarm) BLDG # S-1761, S-1776, S-85, H-29, S-47A, S-1948, S-2633, S-2100, S-46, S-672, LCH-4005, SFC-315, SFC-203

C. Pump on/off status, two pumps in each building.

D. High level (Alarm)

E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)

F. Intrusion (Alarm)

(Continued)

Water/Oil Seperator Structure # S-1854, S-918, S-1450, S-1747, S-1456, no number-near S-1808, no number-near S-1739, SFC-117, no number-near SGP-17

A. Power failure (Alarm)

B. Pump on/off status, two pumps each

C. High level (Alarm)

Monitoring Requirement

Tarawa Terrace Wastewater System

Plant, BLDG TT-35

A. Digestor area for presence of Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)
B. Chlorine room for presence of Chlorine gas. (Alarm)
C. Pump on/off status, (3) influent pumping stations, (2) secondary return pumps, (2) filter pumps.
D. Intrusion (Alarm)
E. Power failure (Alarm)
F. Generator failure (Alarm)
G. Digestor temperature (2)

Influent

A. P.H.
B. Flow
C. Turbidity

Effluent

A. Dissolved oxygen
B. P.H.
C. Chlorine residual
D. Turbidity
E. Flow

Lift Station, BLDG # TT-32, TT-33, TT-34

A. Power failure (Alarm)
B. Generator failure (Alarm)
C. Pump on/off status, two pumps in each building
D. High level (Alarm)
E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)
F. Intrusion (Alarm)

Monitoring Requirement

Camp Johnson Wastewater System

Plant, BLDG M-136

A. Chlorine room for presence of Chlorine gas (Alarm)
B. Pump on/off statue (2) filter pumps and (2) return pumps.
C. Power failure (Alarm)
D. Generator failure (Alarm)
E. Intrusion (Alarm)

Influent

A. P.H.
B. Turibidity
C. Flow

Effluent

A. Dissolved oxygen
B. P.H.
C. Chlorine residual
D. Turbidity
E. Flow

Lift Station, BLDG # M-SE-23, M-SE-241

A. Power failure (Alarm)
B. Generator failure (Alarm)
C. Pump on/off status, two pumps in each building.
D. High level (Alarm)
E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)
F. Intrusion (Alarm)

Water/Oil Seperator Structure # SM-187

A. Power failure (Alarm)
B. Pump on/off status, two pumps each
C. High level (Alarm)

Monitoring Requirement

Camp Geiger Wastewater System

Plant, BLDG TC-563

A. Digestor rooms for presence of Methane, Hydrogen Sulfide gas and Oxygen content.
B. Chlorine room for the presence of Chlorine gas.
C. Pump on/off status on (2) pond pumps, (2) filter pumps, (2) return pumps, tertiary effluent pumps (2), plant discharge pumps (2).
D. Power failure (Alarm)
E. Generator failure (Alarm)
F. Digestor temperature (2)
G. Intrusion (Alarm)

Influent

A. P.H.
B. Turbidity
C. Flow

Effluent

A. Dissolved oxygen
B. P.H.
C. Chlorine residual
D. Turbidity
E. Flow

Lift Station, BLDG # AS-4040, AS-1001, AS-517, AS-426, AS-230, AS-629, AS-606, AS-850, AS-902, AS-2001, AS-2808, AS-4125, AS-4147, AS-206, SAS-3526

A. Power failure (Alarm)
B. Generator failure (Alarm) BLDG # AS-1001, AS-230, AS-629, AS-606, AS-850, AS-2001, AS-4125, AS-206.
C. High level (Alarm)
D. Pump on/off status two pumps in each building.
E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)

Water/Oil Seperator

A. Power failure (Alarm)
B. Pump on/off status
C. High level (Alarm)

Monitoring Requirement

Rifle Range Wastewater System

Plant, BLDG # RR-92

A. Chlorine room for presence of Chlorine gas. (Alarm)

B. Pump on/off status, (2) filter pumps and (2) return pumps.

C. Power failure (Alarm)

D. Generator failure (Alarm)

E. Intrusion (Alarm)

Influent

A. P.H.

B. Turbidity

C. Flow

Effluent

A. Dissolved oxygen

B. P.H.

C. Chlorine residual

D. Turbidity

E. Flow

Lift Station, BLDG # RR-52, SRR-60

A. Power failure (Alarm)

B. Generator failure (Alarm) BLDG RR-52

C. High level (Alarm)

D. Pump on/off status, two pumps in each building

E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)

F. Intrusion (Alarm)

Monitoring Requirement

Courthouse Bay Wasterwater System

Plant, BLDG #BB-4

A. Chlorine room for presence of Chlorine gas. (Alarm)
B. Pump, on/off status, 3 filter pumps, 2 return pumps.
C. Equalization pond pumps (2) compressors, (2).
D. Power failure (Alarm)
E. Generator failure (Alarm)
F. Intrusion (Alarm)

Influent

A. Dissolved oxygen
B. P.H.
C. Turbidity
D. Flow

Effluent

A. Dissolved oxygen
B. P.H.
C. Chlorine Residual
D. Turbidity
E. Flow

Lift Stations, BLDG #BB-1, SA-38

A. Power failure (Alarm)
B. Generator failure (Alarm)
C. High level (Alarm)
D. Pump on/off status two pumps each building.
E. Methane, Hydrogen Sulfide gas and Oxygen content. (Alarm)
F. Intrusion (Alarm)

Water/Oil seperator BLDG #S-6-A, S-6-B

A. Power failure
B. Pump on/off status
C. High level (Alarm)

Monitoring Requirement

Onslow Beach Wastewater System

Plant, BLDG SBA-127

A. Chlorine room for presence of Chlorine gas (Alarm)

B. Pump on/off status on (2) filter pumps, (2) return pumps.

C. Power failure (Alarm)

D. Generator failure (Alarm)

E. Intrusion (Alarm)

Influent

A. P.H.

B. Turbidity

C. Flow

Effluent

A. P.H.

B. Dissolved oxygen

C. Chlorine residual

D. Turbidity

E. Flow

Lift Stations BLDG # SBA-116, SBA-197, SBA-198, SBA-160

A. Power failure (Alarm)

B. Generator failure (Alarm)

C. Pump on/off status, two pumps in each building.

D. High level (Alarm)

E. Methane, Hydrogen Sulfide gas and Oxygen content (Alarm)

F. Intrusion (Alarm)

OPNAV 5216/144A (Rev. 8-81)
S/N 0107-LF-052-2320

DEPARTMENT OF THE NAVY
Memorandum

DATE: 30 MAY 1986

FROM: Env Engr

TO: BMO / Attn: Utilities Director

SUBJ: A/E Study: Monitoring Water & Sewage Operations

Encl: LANTDIV ltr to A/E w/ Scope of Work

1. Pls review encl ASAP:

   a. Have you seen this scope?
   do you approve it?

   b. Do you have any cmts?

2. Due to involvement of Comm/Elec & NREAD;
   Request their review as well.

FOR CEO/NREA:

this may be new to you — Util will keep us informed.
look @ it + let's talk if needed.

Copy to: CEO
NREAD
Env Engr

u/k

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-505-106:8483

II R7

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511-6287

TELEPHONE NO.
444-9631
IN REPLY REFER TO:

N62470-85-B-8010
09A21B6
23 MAY 1986

McCall-Thomas Engineering Co., Inc.
P. O. Drawer 670
Orangeburg, South Carolina 29116-0670

Re: A&E Contract N62470-85-B-8010, Study for Monitoring of Water and Sewage Treatment Systems and Related Equipment, Marine Corps Base, Camp Lejeune and Marine Corps Air Station, New River, North Carolina

Gentlemen:

Due to funding constraints, the scope provided by our letter of 5 September 1985 has been revised. Enclosure (1) provides a revised scope of work for the referenced contract. Please note that three separate proposals are requested and that expeditious processing is required to make A&E contract award this fiscal year.

For further information, please contact Ms. S. M. Gale, P. E., or Mr. J. P. Cuccu of this Command, telephone 444-9680 or 444-9631, area code 804.

Sincerely,

D. R. PHELPS, P. E.
Southern Section Head, CONUS Branch
Acquisition Project Management Office
By direction of the Commander

Encl:
(1) Appendix A (Revision 1) dtd 5 May 1986

Blind copy to:
MCB CAMP LEJEUNE (w/encl (1))
MCAS NEW RIVER (w/encl (1))

APPENDIX A (REVISION 1) 5 May 1986

A&E Contract N62470-85-B-8010
Study for Monitoring of Water and Sewage
Treatment Systems and Related Equipment
Marine Corps Base, Camp Lejeune and
Marine Corps Air Station, New River, North Carolina

1. Develop a feasibility study with piping and instrumentation diagrams; cost estimates; basis of design; and communications, and monitoring and control system analysis for water, wastewater and swimming pool facilities located at the Marine Corps Base, Camp Lejeune and the Marine Corps Air Station, New River, North Carolina. The purpose of this study is to determine the economic and engineering feasibility of monitoring and controlling these systems via a computer system.

2. Prepare separate fee proposals for the three facility types specified below:

a. Water Treatment

b. Wastewater Treatment

c. Swimming Pools

3. Break down each of the fee proposals such that the below prioritized design items can be separately negotiated:

a. Prepare a Piping and Instrumentation Diagram (P&ID) for each type facility with a cost estimate (CE) and Basis of Design (BD). Prioritize the P&ID instruments and individually price them.

b. Prepare a communications system analysis for telephone, radio and other means with a CE and BD.

c. Prepare a Central Monitoring and Control System (CMCS) analysis for EMCS, UMACS, new dedicated system or other means with a CE and BD.

d. Tailor P&ID for Existing Facilities (EF) in each facility type. Prepare a site location map for each EF with symbols depicting the facility, selected communication means and the selected CMCS site location.

4. LANTNAVFACENGCOM Project Manager/Telephone:

Ms. S. M. Gale, P. E., Code 09A21B3/804-444-9670 or
Mr. J. P. Cuccu, Code 09A21B6/804-444-9631

5. Activity Point of Contact/Telephone:

Mr. A. E. Young/919-451-3658 or
Mr. J. Johnson/919-451-5161

6. Proposed Engineering Services Milestones: (Calendar days)

Begin work upon receipt of contract for signature and pursue the work diligently in accordance with the date schedule established therein. Your assessment of the schedule shall be provided monthly to the Project Manager.

	CUMULATIVE NO. DAYS	GOVT REV
A&E Award:	0	–
Draft:	150	(45)
Final (100%):	225	–

7. Project Submittal Distribution:

	LANTNAVFACENGCOM	ACTIVITY
Draft	4	2
Final Report	3	2

MAILING ADDRESSES: DIRECT DISTRIBUTION TO EACH ADDRESSEE BY A&E IS REQUIRED

LANTNAVFACENGCOM

Commander
Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511-6287

Attn: Code 09A21B6, Mr. J. P. Cuccu

ACTIVITY (MCB CAMP LEJEUNE)

Commanding General
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

TYPE FACILITY - WATER TREATMENT

Point Type: M - Monitor
C - Control
T - Run time totalization
A - Alarm

POINT #	POINT	TYPE
1.	Raw Water Booster Pumps	M, C, T
2.	High Lift Pumps	M, C, T
3.	Generator Status	M, T
4.	Plant chlorine detection, power failure and intrusion	M, A
5.	Pump Station chlorine detection, power failure and intrusion	M, A
6.	Plant Filter Flow	M, T
7.	Softner Control and Hardness	M, C, T
8.	Pressure four points in distribution system	M
9.	Low and high water level foot readings and intrusion at tanks or reservoirs	M, A
10.	Low and high water levels and foot readings at detention tanks	M
11.	Wells	M, C, T
12.	Raw Water Flow, Hardness, Iron and P.H.	M
13.	Raw Water Chlorine	M
14.	Raw Water Fluoride	M
15.	Treated water turbidity each filter, P.H., Chlorine, hardness, iron and flow	M
16.	Treated Water Chloride	M
17.	Treated Water Stability	M
18.	Delivered water, chlorine, hardness, P.H., turbidity, iron and flow	M
19.	Delivered Water Fluoride	M

POINT #	POINT	TYPE
20.	Delivered Water Stability	M
21.	Delivered Water Chloride	M
22.	Pump Station Water Flow	M

EF – WATER TREATMENT

FACILITY	APPLICABLE POINTS	NO.	TOTAL
COURTHOUSE BAY			
Plant, Bldg BB–190	2, 4, 6, 7, 8, 11, 12, 15, 16, 18, 21	8(#2), 5(#11) 1 Other	27
Detention Tank	10	1	1
Tank SBB–191	9	1	1
Elev Tank SBB–25 NELO TANK - ANTRACK	9	1	1
RIFLE RANGE			
Plant, Bldg RR–85	2, 4, 6, 7, 8, 11, 12, 15, 16, 18, 21	5(#2), 4(#11) 1 Other	18
Detention Tank	10	1	1
Tank SRR–86	9	1	1
Elev Tank SRR–44	9	1	1
HADNOT POINT			
Plant, Bldg 20	1, 2, 3, 4, 6, 8, 11, 12, 13, 15, 18, 19	3(#1), 4(#2) 40(#11), 1 Other	56
Reservoirs B–20, 735 and 736	9	1	3
Elev Tank S–29	9	1	1
Pump Sta TC–501	2, 5, 8, 18, 19, 20, 22	3(#2), 1 Other	9
HOLCOMB BOULEVARD			
Plant, Bldg 670	1, 2, 3, 4, 6, 8, 11, 12, 13, 15, 18, 19	4(#1), 8(#2) 18(#11), 1 Other	39
Tank S–671	9	1	1
Elev Tank S–2323 STT 40, SM 624	9	1	1
MCAS NEW RIVER			
Plant, Bldg 110	1, 2, 3, 4, 6, 8, 11, 12, 14, 15, 17, 18, 19, 20	2(#1), 6(#2), 26 (#11), 1 Other	45
Tank AS–107, 108	9	1	1
Elev Tank AS–4130	9	1	1
Pump Station MOQ–2002	2, 5, 8, 18, 19	4(#2), 1 Other	8
Reservoir, MOQ–2002 PUMP STA TC 501	9	1	1
MONTFORD POINT			
Plant, Bldg M–178	~~2, 4, 7,~~ (8,) ~~11, 12, 15, 16, 18, 19~~	3(#2), 7(#11) 1 Other	18
Reservoir SM–179	9	1	1
Tank SM–624	9	1	1

FACILITY	APPLICABLE POINTS	NO.	TOTAL
TARAWA TERRACE			
* Plant, Bldg TT-38 HIGH LIFT PUMPS	2, 4, 6, 8, 11, 12, 13, 15, 18, 19	4(#2), 7(#11) 1 Other	19
Tank STT-39	9	1	1
Elev Tank STT-40	9	1	1
ONSLOW BEACH			
Plant, Bldg BA-138	2, 4, 6, 7, 8, 11, 12, 15, 16, 18, 21	3(#2), 2(#11) 1 Other	14
Tank SBA-139	9	1	1
Elev Tank SBA-108	9	1	1

TYPE FACILITY - WASTEWATER TREATMENT

Point Type: M - Monitor
C - Control
T - Run time totalization
A - Alarm

POINT #	POINT	TYPE
1.	Plant chlorine detection, power failure, generator failure and intrusion	M, A
2.	Pumps on/off status	M
3.	Influent turbidity, P.H. and flow	M
4.	Effluent dissolved oxygen, P.H., flow, chlorine residual and turbidity	M
5.	Digestor area for methane, hydrogen sulfide gas, oxygen content and temperature	M, A
6.	Lift station for power failure; high level; intrusion; and methane, hydrogen sulfide gas and oxygen content	M, A
7.	Pumps on/off status	M
8.	Lift station generator failure	M, A
9.	Oil/Water Separator (OWS) power failure and high level	M, A
10.	OWS pumps on/off status	M

EF – WASTEWATER TREATMENT

FACILITY	APPLICABLE POINTS	NO.	TOTAL
TARAWA TERRACE			
Plant, Bldg TT-33	1, 2, 3, 4, 5	7(#2), 1 Other	11
Lift Stations TT-32, TT-33 and TT-34	6, 7, 8	2 per	12
RIFLE RANGE			
Plant, Bldg RR-92	1, 2, 3, 4	4(#2), 1 Other	7
Lift Station RR-52	6, 7, 8	2	4
Lift Station SRR-60	6, 7	2	4
HADNOT POINT			
Plant, Bldg 22	1, 2, 3, 4, 5	10(#2), 1 Other	14
Lift Stations S-1761, S-1776, S-85, H-29, S-47A, S-1948, S-2633, S-2100, S-46, S-672, LCH-4005, SFC-315 and SFC-203	6, 7, 8	2(#7), 1 Other	52
Lift Stations S-1855, S-1055, S-702, S-PT-41, S-34, S-47, NH-110, S-865, H.Schl, SFC-116, SFC-599, SFC-260, AP-22, S-1455 and Not Ord Park	6, 7	2(#7), 1 Other	45
ONSLOW BEACH			
Plant, Bldg SBA-127	1, 2, 3, 4	4(#2), 1 Other	7
Lift Stations SBA-116, SBA-197, SBA-198 and SBA-160	6, 7, 8	2(#7), 1 Other	16
CAMP JOHNSON			
PLANT, BLDG. M-136	1, 2, 3, 4, 5	4(#2), 1 OTHER	8
LIFT STATION M-SE-23	6, 7, 8	2 PER	8
M-SE-24			
WATER/OIL SEPARATOR SM 183	9, 10		
CAMP GEIGER			
TC-563	1, 2, 3, 4, 5		
LIFT STATIONS AS-4040, AS 1001 AS-517			

TYPE FACILITY – SWIMMING POOLS

Point Type: M – Monitor
C – Control
T – Run time totalization
A – Alarm

POINT #	POINT	TYPE
1.	Pool power failure and intrusion	M, A
2.	Pool temperature, chlorine, P.H. stability and flow	M
3.	Pool turbidity each filter	M, T
4.	Pool filter pump on/off	M, C, T

EF – SWIMMING POOLS

FACILITY	APPLICABLE POINTS	NO.	TOTAL
Bldgs 236, 540, PP-2615, M-139, TT-20, AS-204 and AS-709	1, 2, 3, 4	2(#3&4), 1 Other	42