



Ordot Dump Closure

ConsMa2017

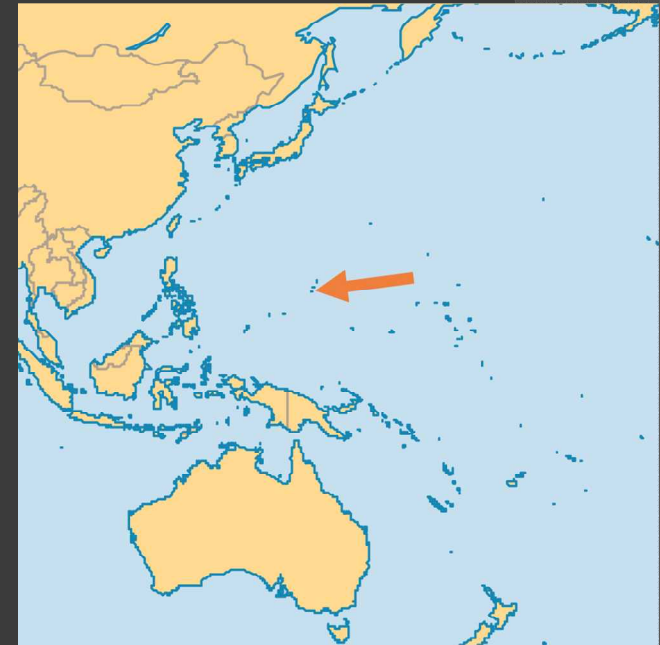
Presented by:
Steven Carbullido



Seoul, South Korea

Project Location

- Guam, a US Territory in the Pacific
- Village of Ordot





Project History

- 1940s – Started as Waste Disposal for Japan/US Military
- 1950s – Turned Over to Local Government
- 1983 – Placed on National Priority List Superfund Site for Leachate Discharging in River
- 2004 – Consent Decree between Federal and Local Government to Close Ordot Dump by 2007
- 2008 – Court Appointed Third Party Receivership
- 2009 – 2011 Construction of Layon Landfill
- 2011 – 2013 Design of Ordot Dump Closure
- 2013 – 2016 Ordot Dump Closure Construction

Background



- Role: Construction Management
- Client: Gershman, Brickner & Bratton, Inc.
- Construction Value: \$43,000,000
- Construction Duration: 28 months

Goals

- Cap waste, Stop leachate discharge and greenhouse gas emissions
- On time, on budget, no accidents
- No Bad Publicity
- Effectively Communicate
- Manage Immense Project Documentation

Waste Relocation



Leachate Collection System

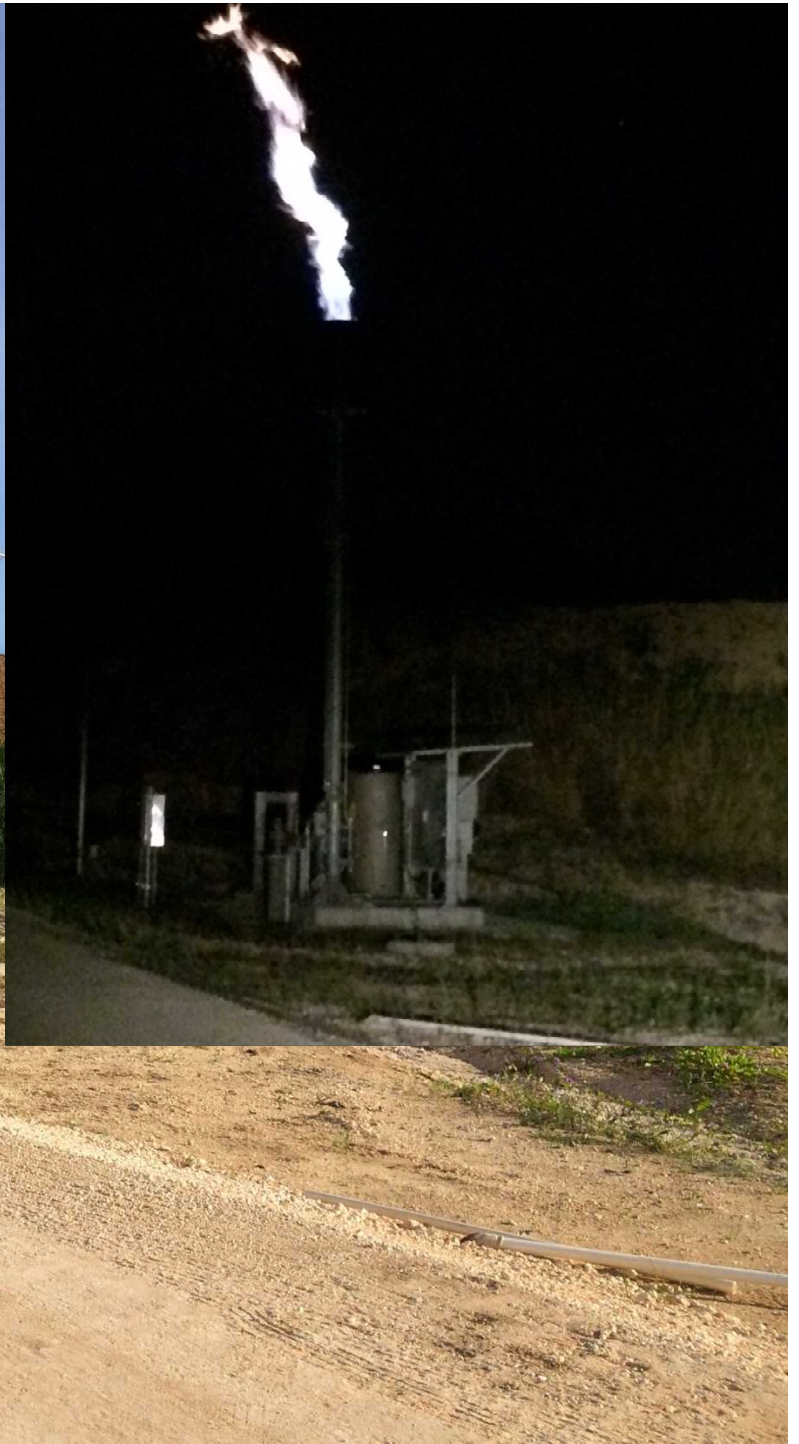


2014-10-09



Gas Collection System





Stormwater Collection System







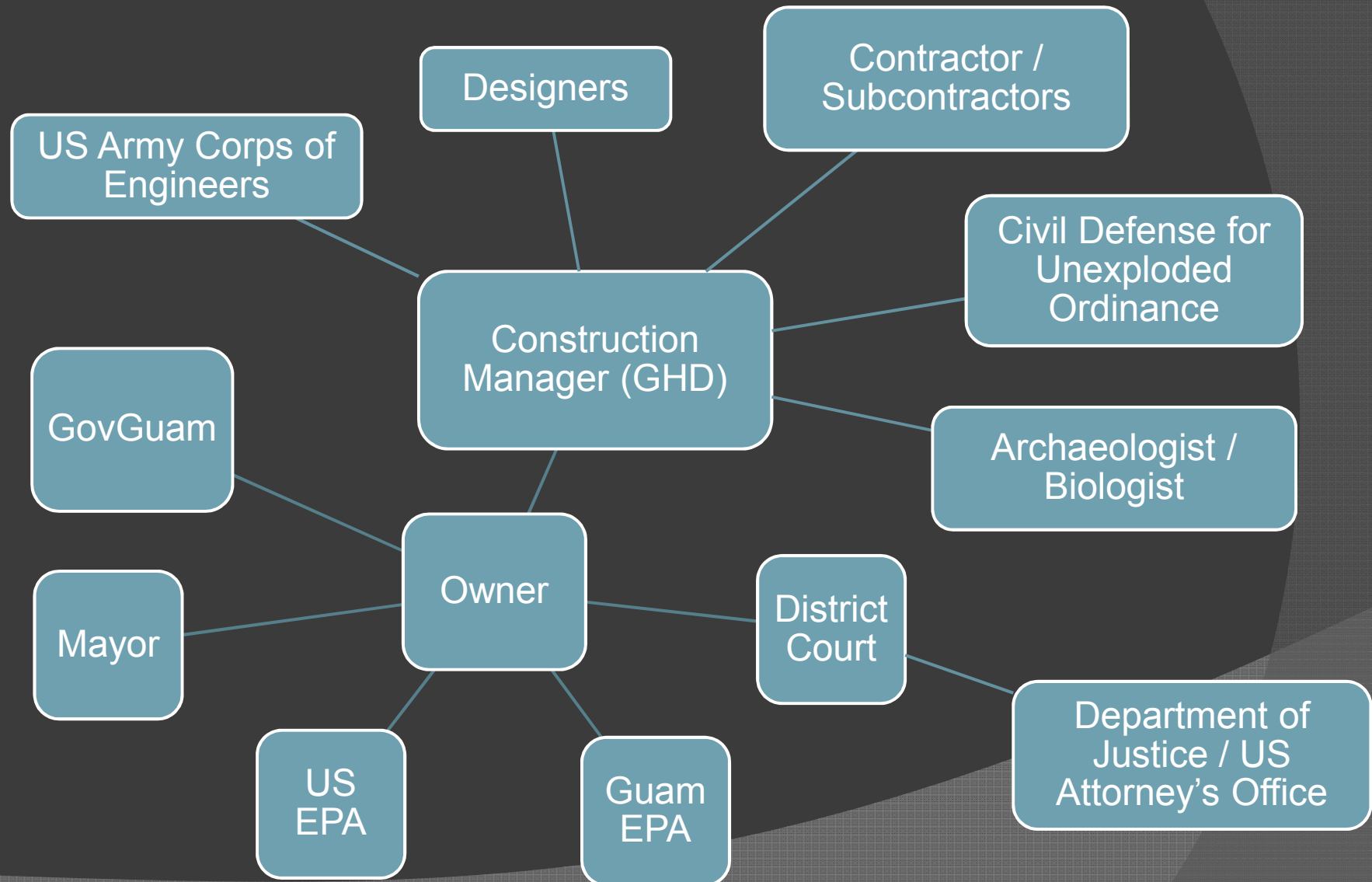




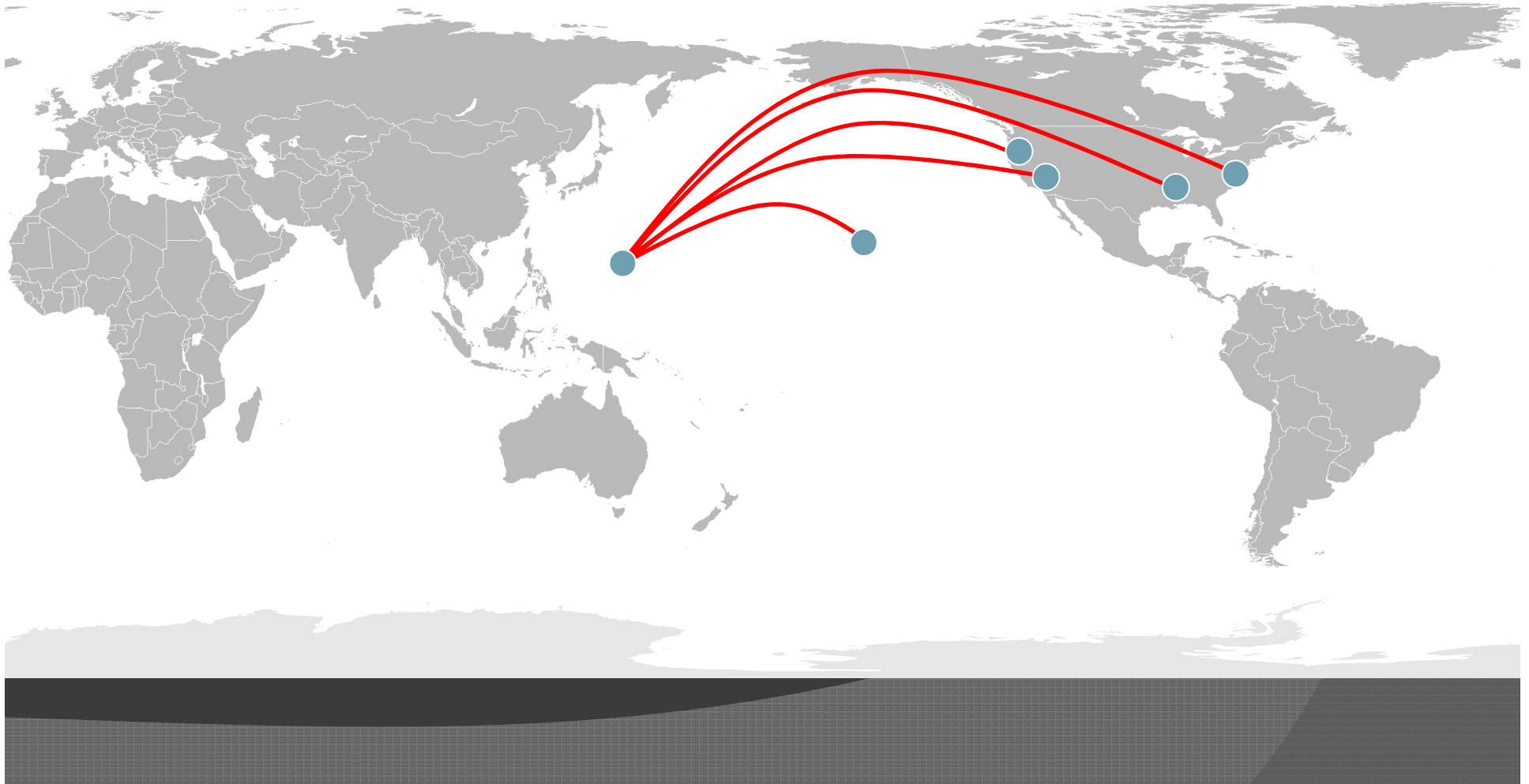




Stakeholders



Project Communication



EADOC



Integrating the
Project Team

Bentley

10/18/2016 3:52:26 PM Pacific/Guam

ORDOT DUMP CLOSURE & DERO ROAD SEWER IMPROVEMENTS [switch project](#)

GHD Inc. Steven Carbullido [logout](#)

Start Memo Dailylog Meeting Calendar To Do

[scheduler](#)

View:

Level: project

Inbox

9 CRN Responses (new)
1 Contract Change Proposal
5 Correction Required Notices
19 DCM Responses (new)
6 DCMs
482 Dailylogs (new)
1 Inspection Report
1 Inspection Request
1 Meeting Minutes
1 Punch List Response
24 RFI Responses (new)
8 RFIs (new)
70 Submittal Responses (new)
17 Submittals (new)
1 Support Request
9 Support Responses
1 Warranty
1 Warranty Response

Calendar Overdue

Documents Due

DCM # 9
DCM # 25
Support Request # 20034
Warranty # 10
Correction Required Notice # 23

Meetings

Outbox

4 CRN Res:
14 Correcti
7 DCM Res:
22 DCMs
10 Dailylogs
1 Meeting M
4 Punch Lis
6 Punch Lis
26 RFI Res:
2 RFIs
1 Submittal
86 Submitta
1 Support R
3 Support R
6 Warranty
3 Warranty I

Recent Documents

Submittal 01700-6.A
Submittal # 01700-6.A - Submittal Response # 1
Submittal # 01700-4.A - Submittal Response
Submittal 01700-5
Submittal # 01700-5 - Submittal Response # 2
Submittal 01700-4.A
Submittal # 01700-4.A - Submittal Response # 4
Submittal # 01700-4.A - Submittal Response # 3

Budget: 0.00
Spent: 2,368,424.00
Budget Remaining: -2,368,424.00
Percentage Spent (Budget): 0.00%
Contingency: 0.00
PCO Spent: 0.00
Contingency Remaining: 0.00
Contracted: 40,536,977.00
Contracted+CO: 40,536,977.00
Contracted Spent: 5.84%

Pay Estimates Pending: 0.00
Retention Pending: 0.00
Pay Estimates Approved: 2,331,618.00
Retention Approved: 0.00
CCRs Pending: -155,209.00
CCRs Approved: -67,608.00
CO Pending: 0.00
CO Approved: 0.00
Risk Items Pending: 0.00
Encumbered: 38,168.55

Common Tasks

Create Submittal
Create Meeting Invitation

AAAA

Close

EADOC Modules



Integrating the
Project Team



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10/13/2016 2:03:49 PM Pacific/Guam

RFI Submittal DCM Inspection Punch List Warranty CRN

[master](#) [New](#)

Start

Work

Documents

Report

Finance

Profile

Admin

Help

Inbox

Type	Document
☐ Response	Submittal Response # 1 - Black Construction Corporation Response to Submittal # 01700-4.A
☐ Response	Submittal Response # 1 - GLA. Response to Submittal # 01700-3
☐ Response	Submittal Response # 1 - GLA. Response to Submittal # 01700-2
☐ Response	Submittal Response # 2 - Black Construction Corporation Response to Submittal # 01700-1
☐ Response	Submittal Response # 1 - GLA. Response to Submittal # 02270-1
☐ Response	Submittal Response # 1 - GLA. Response to Submittal # 02773-20
☐ Response	Submittal Response # 1 - GLA Response to Submittal # 02801-9
☐ Response	Submittal Response # 1 - GLA Response to Submittal # 02801-8

☐ Check All

1 2 3 4 5 6 7 8 9

Outbox

Type	Document	Sent to
☐ Official Response	Submittal Response # 1 - GHD Inc. Response to Submittal # 01700-6.A	
☐ Official Response	Submittal Response # 1 - GHD Inc. Response to Submittal # 01700-6.A	
☐ Official Response	Submittal Response # 1 - GHD Inc. Response to Submittal # 01700-6.A	
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☐ Official Response	Submittal Response # 1 - GHD Inc. Response to Submittal # 01700-6.A	

☐ Check All

1 2 3 4 5 6 7 8 9

☒ Responses

[Closed](#) [Pending](#) [Draft](#)

GC-2 - GEPA Stockpiling Permit [E - Not Reviewed]
1 - GHD Inc. Response to Submittal # GC-2
GC-1 - Schedule of Values [B - Make Corrections as Noted]
1 - GHD Inc. Response to Submittal # GC-1
16442-3 - 600-Volt Rated Panelboard & Circuit Breakers [B - Make Corrections as Noted]
1 - GHD Inc. Response to Submittal # 16442-3
16442-2 - 600-Volt Rated Panelboard & Circuit Breakers [A - Reviewed/No Exceptions Taken]
2 - GHD Inc. Response to Submittal # 16442-2
1 - EOR Response to Submittal # 16442-2
16442-1.A - 600-Volt Rated Panelboard & Circuit Breakers [A - Reviewed/No Exceptions Taken]
2 - GHD Inc. Response to Submittal # 16442-1.A
1 - GPA Inc. Response to Submittal # 16442-1.A
16442-1 - 600-Volt Rated Panelboard & Circuit Breakers [C - Amend as Noted and Resubmit]
1 - GHD Inc. Response to Submittal # 16442-1
16413-1 - Enclosed Transfer Switch [A - Reviewed/No Exceptions Taken]
1 - GHD Inc. Response to Submittal # 16413-1
16235-3 - Standby Engine - Generator Unit [A - Reviewed/No Exceptions Taken]
1 - GHD Inc. Response to Submittal # 16235-3
16235-2.A - Standby Engine - Generator Unit [A - Reviewed/No Exceptions Taken]
1 - GHD Inc. Response to Submittal # 16235-2.A
16235-2 - Standby Engine - Generator Unit [C - Amend as Noted and Resubmit]
1 - GHD Inc. Response to Submittal # 16235-2
16235-1 - Standby Engine - Generator Unit [B - Make Corrections as Noted]
1 - GHD Inc. Response to Submittal # 16235-1
16140-1 - Wiring Devices [B - Make Corrections as Noted]
1 - GHD Inc. Response to Submittal # 16140-1
16130-2 - Raceways and Boxes [A - Reviewed/No Exceptions Taken]
1 - GHD Inc. Response to Submittal # 16130-2
16130-1 - Raceways and Boxes [B - Make Corrections as Noted]
2 - GHD Inc. Response to Submittal # 16130-1
1 - GPA Response to Submittal # 16130-1
16123-1 - 600-Volt Wire and Cable [A - Reviewed/No Exceptions Taken]
1 - GHD Inc. Response to Submittal # 16123-1
16060-1 - Basic Electrical Material & Methods [A - Reviewed/No Exceptions Taken]

AAAA

Daily Reports



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Bentley

10/19/2016 3:43:56 PM Pacific/Guam

StartMemoDailylogMeetingCalendarTo Do

[request](#)[inbox](#)[history](#)[links](#)[print](#)

Share

Start

Work

Documents

Report

Finance

Profile

Admin

Help

Weather

Files and Pictures

From Time:12:00 AM

To Time:11:59 PM

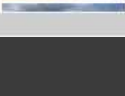
Description:Partly Cloudy, Clear, Rain, Scattered Clouds, Overcast, Mostly Cloudy

Low Temperature (F):77

High Temperature (F):91

Windspeed (MPH):6

Rainfall (Inch):0.01

File	Size	Thumbnail	Description
IMG_1386.JPG	207.26 KB		[Additional Attributes] A: Installation of fence accessories for the security fence at STA 26+00 to 29+00 by Pond 3 (9:17 am).
IMG_1391.JPG	190.66 KB		[Additional Attributes] B: Installation of formwork and geocells along slope B near STA 35+00 to 37+00 of the perimeter access road at the westside of phase 2 (9:26 am).
IMG_1393.JPG	154.16 KB		[Additional Attributes] C: Installation of geocells along slope C near STA 503+00 to 504+00 of bench B at the westside of phase 2 (9:28 am).
IMG_1397.JPG	183.54 KB		[Additional Attributes] D: Installation of 300 mil geocomposite along slope D near STA 404+00 to 405+00 of bench C at the westside of phase 2 (9:32 am).
IMG_1404.JPG	100.75 KB		[Additional Attributes] E: Tying in and extrusion welding 60 mil geocomposite along slope

☒ Responses

ClosedPendingDraft

top - Daily Construction Quality

20 - 2015-07 Ordot Dump Closures

11 - 07/16/2015

12 - 07/17/2015

13 - 07/20/2015

14 - 07/22/2015

15 - 07/23/2015

16 - 07/24/2015

17 - 07/27/2015

18 - 07/28/2015

19 - 07/29/2015

20 - 07/30/2015

21 - 07/31/2015

19 - 2015-06 Ordot Dump Closures

1 - 06/01/2015

2 - 06/02/2015

3 - 06/03/2015

4 - 06/04/2015

5 - 06/05/2015

6 - 06/08/2015

7 - 06/09/2015

8 - 06/10/2015

9 - 06/11/2015

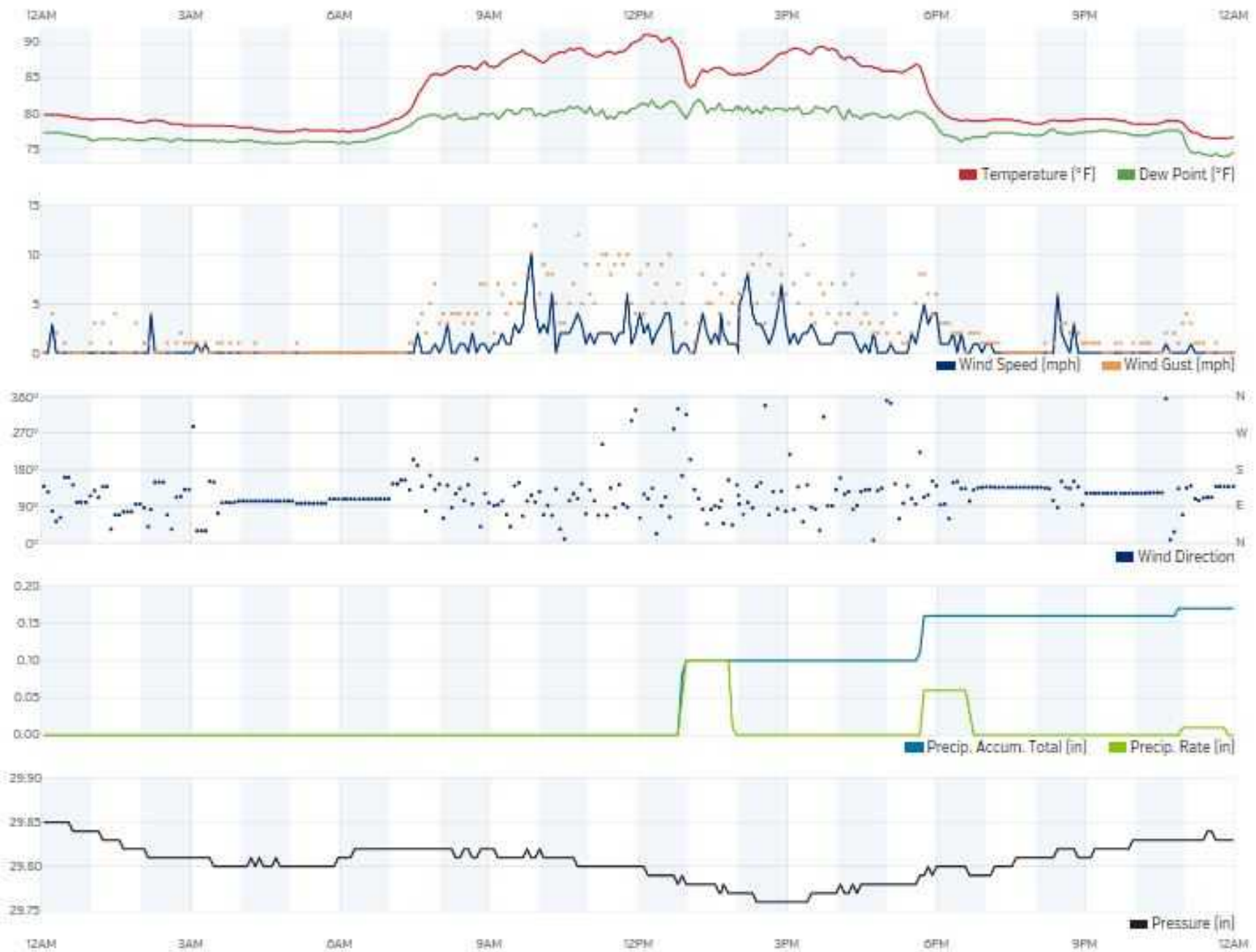
10 - 06/12/2015

11 - 06/15/2015

FirstPrev56789N

Close

Weather History Graph July 15, 2014







2015-11-23



08/15/2015

Claims – Western Channel Relocation

- 10.4” Rain affected vegetation establishment after Construction
- Portion of Channel not at Design Elevation
- Adjustment to Flood Plain Necessary after Storm Results
- Negotiated shared cost
- Client did not pay for Channel Repair work



Correction Required Notices

32

CRNs

CRN

☒ Responses
[Closed](#) [Pending](#) [Draft](#)

9 - HDPE Storm Drain Pipe Installation
1 - GHD Inc. Response to Correction Required Notice # 9
10 - Stabilization of Main Entrances & Dust Control
11 - Protection of Completed and Partially Completed Work
12 - Dero Road Shoulder and ROW repair
13 - Air Release Valve required for the Leachae Pumps
14 - WCR Corrective Work
1 - GHD Inc. Response to Correction Required Notice # 14
15 - Correction Required Notice #15 - Failed Stormwater BMPs and Sediment Discharge
16 - Condition of TLSP
17 - Damaged LFGMW 4
18 - WCR Repairs
19 - Removal of the TLSP
20 - Trampolining of Installed Geosynthetics on Bench E
21 - WCR Corrective Action
1 - GHD Inc. Response to Correction Required Notice # 21
2 - GHD Inc. Response to Correction Required Notice # 21
3 - GHD Inc. Response to Correction Required Notice # 21
22 - Maintenance of Entrance and Waddles along Dero Road
1 - GHD Inc. Response to Correction Required Notice # 22
2 - SWPPP Violation - GHD Inc. Response to Correction Required Notice # 22
3 - GHD Inc. Response to Correction Required Notice # 22
4 - GHD Inc. Response to Correction Required Notice # 22
23 - MIXING/DISPOSING OF TRASH ON TOP DECK
24 - Stormwater Drainage Dissipaters
1 - GHD Inc. Response to Correction Required Notice # 24
25 - Top Deck Grading
26 - Geocell Overfill
27 - Leachate Storage Tank Cleaning
28 - Dero Road Lateral Cleanout and Cap Locations
29 - Pond 4 Steep Slope
1 - GHD Inc. Response to Correction Required Notice # 29
31 - CM/CQA Site Office Container
32 - TS/Typhoon In-Fa Items at Risk
1 - Black Construction Corporation Response to Correction Required Notice # 32
2 - GHD Inc. Response to Correction Required Notice # 32

Close

Claims – Stormwater in Leachate System



Unexploded Ordinances



US M101 HE 155mm Projectile



Meters

0 30 60 120

UXO Found at Ordott

 UXO

Item	Type	Northing	Easting
1	75mm Projectile	634323.705	327362.584
2	75mm Projectile	634324.19	327370.496
3	75mm Projectile	634310.994	327346.816
4	75mm Projectile	634320.658	327297.44
5	75mm Projectile	634328.571	327226.989
6	75mm Projectile	634332.124	327307.914
7	37mm Projectile	634397.124	327325.81
8	37mm M2 Cannister	634392.6	327299.5
9	37mm M2 Cannister	634378.71	327278.63
10	Mk2 Grenade	634408.59	327282.19
11	75mm Projectile	634294.6	327267.66
12	75mm Projectile	634400	327192.22
13	M50 Incendiary	634269.56	327268.49
14	81mm Mortar	634328.46	627172.63
15	155mm Projectile	634276.44	327314.59
16	75mm Projectile	634410.34	327184.7
17	37mm Projectile	634356.82	327229.45
18	81mm Mortar	634394.05	327234.78
19	75mm Projectile	634318.61	99735.894
20	81mm Mortar	634369.04	327146.78
21	Mk2 Grenade	634274.84	327259.14
22	Mk2 Grenade	634229.09	327166.72
23	Mk 45 5 in Illuminatio	633416.42	328718.8
24	Mk2 Grenade	634595.41	328716.35
25	Mk2 Grenade	634434.66	327145.83
26	Mk 35 5 in HE	633328.04	328414.92



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AEX, @SwampMap, AerialGrid, IGN, IGP, swisstopo, and the GIS User Community

Unexploded Ordinances



MK2 Hand Grenade

Unexploded Ordinances



AN M50 SERIES INCENDIARY BOMB

Outcomes

- 14,000,000 gallons of leachate disposed
- 160,000,000 standard cubic feet of gas disposed
- Finished 55 Days Before Deadline

"This [project] was very complex for the CM given the multitude of initial site conditions that could have become potential differing site conditions claims... The project was completed on time, within budget, and of acceptable quality."

Chris Lund - Owner

"Today is March 28, 2016. ... It was 16 years ago that the consent decree was filed by the appropriate parties," the chief judge said. "It is finally closed and I am very, very happy."

Chief Judge Gatewood - Guam Daily Post

Post-Construction

- Temporary Operator
- Develop Standard Operating Procedures
 - Leachate Pumping
 - Gas Flare Operation
 - Emergency Protocols
 - Grass Maintenance
 - Monitoring





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