Appendix B:
Field Notes
(on CD-ROM at end of document)

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CIV 0053

Red Hill Bulk Fuel Storage Facility, JBPHH, Oahu, Hawaii

60481245

Rite in the Rain®

ALL-WEATHER

LEVEL

FIELD BOOK

№ 310F

Field Logbook

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PAGE	REFERENCE	DATE
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CTO PM	Jeff Johnson (JJ) 808-356-5340, 808-227-2761	
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Field Mgr	Jack Kronen (JK) 808-356-[illegible], 808-927-3340	
GSHO	Bryan Matsunobu (BM) 808-551-5845	
SSHO	Teresa Quiniola (TQ) 808-356-5359, 808-388-8714	
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Geologist	Danielle Coulombe (DaC) 808-356-5303	
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Geologist	Carolina Anchieta (CA) 808-356-5364	
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Field Staff	Randy Garrigan (RG) 808-258-7742	
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H&S Mgr	Devon Molitor (DM) 858-531-9666	
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Geologist	Dan Frerich (DF) 808-356-5355	
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	Ravi Mohandie (RM) 808-471-1171 x 260	
	Raelynn Kishaba (RK) 808-47-1171 x 233	
	Guard Shack @ Main Gate/Bottom Entrance: 808-473-0836	
	Emergency: 911	
	Pearl Harbor Regional Dispatch: 808-472-2222	
	Pali Momi Medical Center 808-486-6000	

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ALL-WEATHER
LEVEL FIELD BOOK

Name AECOM

Address 1001 Bishop St. Suite 1600
Honolulu, HI 96813

Phone 808-523-8874

Project CLEAN IV CTO 0053
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor-Hickam, Oahu, Hawaii

PPE Required:
level D (safety west, hard hat, gloves, safety goggles, ear plugs, and safety hats), half/full face respirator w/ GMA/P100 if VOC ≥ 0.5ppm or dust ≥ 2.5 mg/m³

RiteintheRain.com

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JL DARLING LLC
Tacoma, WA 98424-1017 USA
US Pat No. 6,863,940

Subcontractors

Drilling	Valley Well Drilling - Mike Sober	808-682-1767
Utility Clearance	Geotek Hawaii - Kevin Vaquez	808-223-9810
Veg Clearance/ IDW	PCS - Jingko Chang	808-945-4549/808-473-8930
Portable Toilet	Cheeni Toi - Office	808-682-2416
Analytical Lab	APPL - Libby Cheesborough	559-295-2275
Data Validation	UDC - Stella Cuenco -	760-827-1100
Dec Laboratory		

Shipping: Fedex Acct 1790-9760-5

129 Pohakulana Pl, Honolulu, HI 96819

808-462-3239

Analyses:

Soil:
- 8015 TPH-d/o - 1x 8oz jar
- 8260 TPH-g } 2x VOA w/ MeOH
- 8260 BTEX } 2x VOA w/ water
- 8270 SIM PAH - 1x 8oz jar

Geotechnical:
- ASTM D4318 Atterberg
- ASTM D2434 Permeability
- API RP40 Porosity
- ASTM D2937 Moisture Density
- ASTM D422 PSD
- ASTM D2487 Soil Classification
- 9081 CEC
- 9045 pH
- Walkley Black TOC

} 1x cooler

Water:
- 8015 TPH-d/o
- 8015 TPH-d/o w/ silica gel
- 8270 PAH
- 8270 SVOC
} 8x 1L amber
- 8011 EDB - 3x 40ml VOA w/ preser
- 8260 TPH-g
- 8260 BTEX, OCA } 6x 40ml VOA HCl
- 8015-175 Methane
- 8260B 1,2-DCA/EDB - 2x 40ml amber glass HCl
- 300.0 Nitrate/chloride/sulfate - 250ml plastic
- Labsol 2,4-methanthylphenol - 1x 40ml VOA vapor

Logbook scanned every 2 days and saved to \\Honolulu\Honolulu\Projects\NAVFAC PAC\CLEAN IV\Lahaina\CTO 0053\400 Technical\

Sampling SOPs (NAVFAC DPM, UCM 2015)

- 1-A-5 Utility Clearance
- 1-A-6 Waste Management
- 1-A-7 Analytical Data Management and Planning
- 1-A-8 Sample Naming
- 1-B-1 Soil Sampling
- 1-C-3 Monitoring Well Sampling
- 1-D-1 Drum Sampling
- 1-F Equipment Decontamination
- 1-I Land Surveying
- III-A Laboratory QC Samples (Water, Soil)
- III-B Field QC Samples (Water, Soil)
- III-D Logbooks
- III-E Record Keeping, Sample Labeling, and Chain of Custody
- III-F Sample Handling, Storage and Shipping

OPPHH Green Waste Disposal Direction (2014)

Analyses (cont.)

Solubility	8270 SVOC (full list)
ATR/FTIR	8015 TPH-d/o
9045 pH	6010 TPH 23 Metals
120.1 conductivity	351.2 TKN
1030 ignitability	353.2 Nitrate Nitrite
8021 Methane	Urban Inorganic Carbon
1312 SPLP	Urban Organic Carbon
	3010 Br/Cl/Fl/PO4/SO4

"Unknown" Sample - 8oz jar

- 1311/ 6010 TCLP Metals
- 6010 TPH Metals
- 9040/9045 pH
- 1030 Ignitability
- 8015 TPH-d/o
- 8270 SIM PAH (full list)
- 8082 PCB Aroclor
- 8260 BTEX + MNOS
- 8260 TPH-g

} 1x jar

Partly cloudy, breezy, ENE winds 82°
10-18-2016

CTO 53 Red Hill GWM

0745 Arrive @ Halawa Correctional facility (HCF). AECOM personnel Jon Kramer (JK), Charles Bergel (CB), Adam Miyamoto (AM), Tim Vernon (TV), Terence Quinlan (TQ), Randy Gauyan (RG)

0800 Meet w/ DLNR CWRM Bob Chenet and Patrick Casey in parking lot.

0815 Drive in to Halawa Deep Monitor Well 2253-03

0830 Conduct Tailgate H&S Meeting; discuss planned work: ground water sampling inside tunnel and 2253-03

0835 Begin installing temporary Bladder pump @ 2253-03

0840 TQ and AM depart to Red Hill Shaft.

0850 Measure depth to water @ 2253-03 = 207.02' btoc (See photo of double notches on casing, which is measuring point); PID = 0.0

0920 Run pump into hole, pump is tethered w/ 1/8" DB Polyester cord for security

0945 Pump is set @ 250' bgs

0950 prep to sample by setting up Horiba for water quality parameters; connecting bladder pump to Geotech BP Controller 300 psi 10-18-2016

1009 Pump is actuated

1030 Begin collecting water quality parameters

1035 AK & RG depart ~~RH~~ 2253-03 to go into Red Hill

1110 - Begin sampling ~~RH~~ 2253-03

1150 - End collection of ERH095 from 2253-03. Begin cleanup.

1230 - Mob to RHMW04 to replace pump tubing.

1245 - at RHMW04 (TV, CB, JK + RG), begin teardown of RHMW04 tubing, then replace. PID = 0.0

1400 Take water level reading 293.31' btoc

1405 Begin dropping pump in water well with new dedicated tubing

1435 Pump set @ bottom; prepare to hook up pump controller and collect water quality parameters

1440 Begin pumping

1500 - Set pump pressure to 170 psi w/ 90 second fill + 30 second discharge.

 10/18/16

1530 - Water returns to surface, set flowrate at 150mL/min at 185 psi; 40 second Recharge/Discharge

1545 - Begin water parameters. AM + TQ continue sampling tunnel wells.

1600 - JK goes to discharge purge water from HDMW2253-03 at IDW area; TV goes to get additional nitrogen tank, large tank is running low.

1620 - Begin sampling at RHMW04 (ERH096)

1755 - complete sample collection at RHMW04. RHMW2253-01 (Red Hill Shaft) has been sampled by TQ and AM.

1815 - AM + TQ dispose of purge water at IDW staging area.

1820 - RG, TV, CB + JK offsite.

1830 - TQ + AM offsite. End of Field day.

10/18/16

Sunny - partly cloudy, Trades ENE, 85°

10/19/16

0600 - AM, TV, RG + TQ at warehouse

0710 - AM, TQ mob to Red Hill Tunnel to sample RHMW05, 02 - 03, TV + RG Mob to Red Hill RHMW06. CB exchanged Nitrogen tanks at AirGas. Mob to RHMW06

0730 - CB drops Nitrogen tanks to TQ/AM.

0800 - CB, RG, TV at RHMW06. CB gives tailgate briefing and set up sampling area.

0840 - start purging RHMW06.

0843 - water returns to surface.

0900 - JK onsite. RG mob to swap out Nitrogen tank at AirGas.

0915 - JK mob to TQ/AM in Tunnel.

0935 - Begin collection of ERH097 from RHMW06 (see QC Logbook for Details, + Sampling form for purge data).

1015 - complete collection at RHMW06, clean up and mob to RHMW07.

1035 - Begin set up at RHMW07

1056 - Begin purge at RHMW07,

1235 - Complete Sampling RHMW07 (ERH098 - see QC log and sampling log for details). Breakdown setup.

 10/19/16

1300 - complete clean up at RHMW07, mob to RHMW08.
1305 - at RHMW08, setup.
1400 Measure depth to water 292.13' btoc
1600 Begin purging H_2O
→ encountered problem w/ fittings as quick connect on Geotech controller is different size than on air line tubing @ RHMW08. RG goes to get fittings
1645 Water quality parameters have stabilized, purged 5 gallons
Depth to water stable @ 292.1' btoc
1700 L. Breyal departs. Jack Kronen is SSHO
→ @ 1650 begin collecting samples
1730 T. Quinialia (TQ) & A. Mizamoto (AM) arrive, drop off 1 DW from RHMW05
1735 Depart (JK) w/ TQ & AM to show location of OWDFMW01 then return to RHMW08; TQ and AM depart site
1750 Sampling of RHMW08 complete
1820 Depart site, return to warehouse

Jack Kronen
[signature] 10-19-16

Cloudy to sunny, strong trades, 90° 10-20-16
0600 Arrive @ warehouse to prep GW sample @ RHMW09 and OWDFMW01
0710 LB, TV, RG, TQ, AM arrive @ Red Hill Gate; conduct H&S Tailgate meeting; discuss planned work
0730 @ RHMW09, prep to begin sampling
0800 Measure Depth to Water @ 377.14 btoc
0810 begin to purge well; find that water will take awhile to run to surface
0900 Still no water to surface and consuming high volume of compressed Nitrogen gas RG goes to Airgas to pick up one 5' bottle of Nitrogen. Call Geotech customer support
0930 Call w/ Jay Tikalsky @ Geotech and get recommendation on controller settings
1030 - Set pump pressure at 270 psi, 50 second refill, 100 second discharge after speaking with Geotech.

Rite in the Rain

10/20/16

1400 - After multiple attempts to adjust flow psi, discharge and fill time, water is still not coming up further than the top of the well. Continue purging and adjusting pump settings.

1440 - Return pump settings to 260 psi, 80 second discharge, 60 second fill and pumping is still not advancing through the tube beyond top of well casing at RHMW09. Water in tube is dropping and lifting only approx. 2ft per cycle and no more; bladder may be compromised. No replacement bladders are available, need to order before pulling pump to inspect bladder and O-rings.

- Clean up sampling area.

1500 Dimension of Soil Bin @ RHMW09: 6'h x 6.6'w x 14'L

1510 Stop pumping operations and demob; take OWDFMW01 IDW to drum staging area

1600 Finish @ site go to RHMW08

1615 Take down Sign @ RHMW08

1630 Depart Site

Jack Kronen [signature] 20-16

Rain & Clouds, mod. trades, 80°

10-24-16

0600 Arrive @ Warehouse

0745 On site @ Red Hill Main Gate LB, JK, TV, RG prep to sample @ RHMW09; will pull pump first

0815 Conduct H&S Tailgate meeting; prep to pull pump; lay out plastic sheeting

0900 VWD (Rod Kock) arrives @ RHMW08 to take back hose

0920 Begin pulling pump out of RHMW09

0930 Dedicated pump is out of well, note that bladder is collapsed and contains water. Remove bladder and inspect; drain water. Bladder is in good condition, refit pump.

0940 Begin running dedicated pump back into RHMW09

0950 Pump is back on bottom

0955 Measure depth to water: 377.11' btoc prep equipment to collect sample

1015 Begin pumping @ 100 psi and set fill/discharge @ 30"/30"; gradually increase to 185 psi

1025 Nitrogen supply set @ 200; increase to 40"/40"

1032 Increase to 205 psi @ 40"/40"

Rite in the Rain

10-24-16

1048 Change out Nitrogen bottle; set regulator @ 215 psi

1057 Increase to 225 psi 50"/50"

1115 Increase to 250 psi

1130 No water to surface, decide to pull pump

1150 Pump @ surface; note bladder has collapsed; refit pump.

1200 Perform pump test at surface and find there is a leak in the air line. Turns out leak is along bonded weld; and see that it is defected inside tubing

1300 Pick up 3/8" union @ Swagelok - # SS-600-6 to splice 3/8" air line

1415 Repair 3/8" airline and run pump tests at surface. Pump is still not fully functioning due to collapsing bladder issue; plan to run pump into well

1430 Run dedicated pump in

1520 Dedicated pump is set in well.

1530 Begin pumping @ 215 psi; water to surface in ~2 minutes

1545 Pump set to 175 psi; 30"/30"

[illegible] 300 ml/min

1600 Pump set @ 180 psi 35"/35"

Time	Gal	DTW	Temp(C)	pH	ORP(mV)	SC	Turb	DO	TDS	Sa
1605	3.0		25.65	7.09	86	0.331	0.00	8.15	0.216	0.
1610	3.5		25.31	7.38	73	0.335	0.00	7.53	0.216	0.
1615	4.0	377.09	25.46	7.20	88	0.321	0.00	7.14	0.209	0.
1620	4.5	376.93	25.27	7.42	79	0.335	0.00	6.74	0.218	0.
1625	5.0	376.95	25.17	7.46	79	0.335	0.00	6.34	0.217	0.
1630	5.5	376.95	25.00	7.34	90	0.326	0.00	6.39	0.209	0.
1635	6.0	376.95	24.82	7.45	82	0.335	0.00	6.35	0.216	0.
1640	6.5	376.95	25.04	7.42	85	0.334	0.00	6.13	0.217	0.

1645 - not enough gas (Nitrogen) to collect a sample. Will re-purge in the morning. Clean up site.

1700 Depart Site

JACK KRONEN

10-24-16

 Partly Cloudy to sunny, breeze, 84°

10/25/16

0700 - CB & Lough Red Hill gate.

0710 - at site. Set up equipment and calibrate Horiba U-53. SN 877 FYFCJ, Display SN: REYJ6JNB. - calibrate to pH = 4.00 (3.94), Turb = 0.00 NTU (0.00), SC = 4.49 mS/cm (4.50) PID calibrated to 0.00 at 100.4 ppm Isobutylene

0725 - CB gives tailgate safety.

Objective: Collect GW samples from RHMW04 and RHMW09.

Personnel: C Bigeal, T Vernon, R. Gannigan

Weather: Mostly sunny, low 80's.

0745 - Begin purging RHMW09. PID = 0.0 See GW sampling Log for details

0850 - collect ERH103 from RHMW09.

1000 - complete sample collection, PID = 0.0 See QC Log for details, clean up.

1030 - set up at RHMW04. Adjacent shooting range is active. Approved by Red Hill to access RHMW04.

1040 - Begin pumping RHMW04. See GW sampling Log for details. PID = 0.0

1140 - ~~[illegible]~~ CB 10/25/16 Collect ERH096 from ~~ERH0~~ CB 10/25 RHMW04. PID = 0.0

10/25/16

1225 - complete sampling ERH096 see QC log for details. RG mob to warehouse to pack samples to pack for shipment to APPL Lab. TV + CB cleanup.
1240 - mob to IDW staging area to dispose of purge water.
1300 - mob to AECOM warehouse. All offsite.
1330 - at warehouse. Demob equipment.
1425 - CB mob to office.
1500 - at office. End of field day.

10/25/16