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NRC0001AE



# FINAL REPORT

# ATTACHMENT C

# Observation Well Logs

# and Development Records

# Slug Test Data

# Packer Test Data

# Volume 1 of 1

FINAL REPORT

ATTACHMENT C

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| | | |
|---|---|---|
| OW-205a | OW-333 | OW-621a |
| OW-205b | OW-401a | OW-621b |
| OW-212 | OW-401b | OW-622 |
| OW-213 | OW-405 | OW-623 |
| OW-227 | OW-501 | OW-624 |
| OW-233 | OW-612 | OW-625 |
| OW-305a | OW-614 | OW-626 |
| OW-305b | OW-617 | OW-627a |
| OW-312 | OW-618 | OW-627b |
| OW-313 | OW-619 | |
| OW-327 | OW-620 | |

# FINAL REPORT

## ATTACHMENT C

This Attachment is one of a number of attachments that are part of the following report which was prepared by MACTEC Engineering & Consulting Inc.:

Data Report
SCE&G COL Project
V.C. Summer Nuclear Plant
Subsurface Investigation and Laboratory Testing
Bechtel Subcontract No. 25242-102-HC4-CY00-00001
MACTEC Job No. 6234-06-3534

For background and a description of scope of work contained in the report, please refer to the above referenced report. The report was addressed as follows:

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The following list shows other Attachments to the above report and their included information:

Boring and OW Locations ..... See Attachment A

Geotechnical Logs (Including Exploratory Borings at OW Locations).... See Attachment B

CPT Logs..... See Attachment D

Geophysical Test Data..... See Attachment E

Laboratory Test Data (Geotechnical)..... See Attachment F

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## 1.0 OBSERVATION WELLS

### 1.1 Exploratory Borings to Plan Well Installation

Exploratory borings were made near each OW location to obtain the information necessary for Bechtel to determine the depth(s) for the OW installation. The logs for these exploratory borings, which have the same numbers as the corresponding Observation Wells (OWs), are found in Attachment B of the report.

Exploratory borings for the OW locations may be classified as two types. The first type is those where the exploratory boring was not for geotechnical engineering information, but served only to obtain the information necessary for Bechtel to determine the depth for the OW screen. The soil portion of this type of exploratory boring may have been drilled with hollow-stem augers (HSA) and soil samples were obtained at approximately 5 ft depth intervals using the SPT sampler. These soil samples were suitable for laboratory testing but the SPT blow counts will not be used for geotechnical engineering purposes. The HSA drilling extended to the depth specified or to refusal to HSA drilling, and a one inch diameter PVC pipe (slotted) was placed in the boring as necessary to allow measurement of the water table depth over time for one to several days after the augers are removed. The depth to the water in the temporary PVC pipe was measured until the approximate stabilized water table depth was evaluated, after which the HSA boring was tremie grouted (using the one-inch PVC pipe as the tremie) and abandoned.

The second type of exploratory boring is one that is to be used for geotechnical information. In these, the drilling method was mud rotary (except within the upper 15 ft in some borings, where hollow stem augers were used) and the SPT samples were taken according to the Specification for the geotechnical borings. A temporary PVC pipe or other casing was used to keep these boreholes open, as necessary, to allow the water level within the borehole to equalize with the surrounding water table to provide the information necessary to determine the depth for the well screen(s) in the OW.

Following Bechtel's review of the exploratory borings including the depth to the water table as described above, the exploratory borings were filled with grout and abandoned. The observation wells were then installed using HSA, mud rotary, or air rotary drilling methods in accordance with the Specification and following Bechtel's directions for depth and other details. Diagrams of the wells are provided. The wells consist of PVC screen and riser pipe, sand filter pack, bentonite chips or pellets and cement bentonite grout. Protective steel well covers and concrete pads were placed at the surface as noted in the Specification.

### 1.2 Well Installation

Thirty One observation wells were installed on the site as part of this project – screened in the soil/weathered rock zone and in the rock. The wells were installed per Section 5.3 of the Specification.

Boreholes for installation of all observation wells were advanced using either hollow stem auger, mud rotary or air rotary drilling to make a nominal 6 inch hole diameter. The holes were advanced to depths specified by Bechtel's field representative.

As discussed in Section 1.1, the observation wells were installed in separate borings made nearby the geotechnical borings as instructed by Bechtel, with the exception of OW-227, OW-617, OW-622, and OW-625. The geotechnical borings B-227, B-617, OW-622, and B-625 were reamed out and/or deepened for installation of these associated monitoring wells. The lithology shown on the Observation Well Logs for OW-227, OW-617, OW-622, and OW-625 is from the borehole in which the well was installed. The lithology shown on the remainder of the Observation Well Logs is from the nearby companion geotechnical borehole. The geotechnical borings were generally made between about 5 and 20 feet from the observation well (See survey coordinates for actual offset distance). DCN SC362 Rev 2

Upon reaching the designated depth for a well, slotted PVC casing connected to solid sections was set. A sand pack and bentonite seal were then placed. A grout plug was placed from the top of the bentonite seal to the ground surface to each borehole. The grout mix specified in Section 4.13 of the Specification was used.

The depth of the screened interval, length of the screen and general well configuration were designated in the field for each well by Bechtel's field representative. Since the ground surface elevations at the wells sites were not determined until after the well pads were placed, the top of the PVC casing elevation, less the casing stickup above ground surface as measured at the time of installation, was used to back-calculate the ground surface elevation shown on the observation well logs. All water depth measurements are referenced to the top of the PVC casing. The elevation of the top of the casing was also used along with measurements of the well sections to calculate elevations for the well monitoring interval.

Construction details for all 31 wells are included in Appendix C-1 herein.

All wells were capped with a lockable steel well cover extending approximately two feet above grade. A concrete pad, two feet square and six inches thick, was also placed around each well cover per the Specification.

## 1.3 Well Development

After well installation was completed, wells were developed by pumping and bailing. The development procedure agreed to with Bechtel was first to bail until the water shows minimal sediment, then pump to remove at least 3 standing well volumes of water, cycling the pump on and off to create a surging effect. A well was considered developed when the pumped water was reasonably clear of suspended sediment and relatively clear to sight.

All wells were developed satisfactorily using the planned procedure. Well development records are included in Appendix C-2 herein.

## 2.0 Field Permeability Tests

### 2.1 Slug Tests

Field permeability testing was conducted in each observation well (except OW 501)using procedures described in Section 8 of ASTM D 4044. This procedure is commonly termed the slug test method. Slug testing involves establishing a static water level, lowering a solid cylinder into the well to cause an increase of water level in the well and monitoring the time rate for the well water level to return to the pre-test static level. This method is commonly called the "slug-in" method. After that stabilization, the slug is rapidly removed to create a lowering of the water level in the well, and the time rate for water to recover to the pre-test static level is recorded. This method is commonly called the "Slug-out" method. Electronic transducers and data loggers are used for measuring the water levels and times during the test.

Table C-2 is a Slug Test Data Summary Sheet. Charts (graphs) of the water surface versus time during the slug tests are in Appendix C-3. The test data, the data logger output sheets, are contained on the CD included herein.

### 2.2 Packer tests

Field permeability testing by the packer method was conducted in selected exploratory borings using test procedures described in ASTM D 4630, modified to use a manually read flow meter rather than a digitally recorded one. The packer testing method involved establishing and maintaining a constant pressure in the packer test interval or test length, measured by an electronic transducer, and determining the rate of inflow associated with maintaining the pressure. The test method is thus know as the constant head injection test". Five pressure values were generally used in each test interval. The boring locations for packer testing were identified in Bechtel's letter No. 25242-102-T14-CY00-00022 dated June 9, 2006. That letter changes the test location and depths shown in the Specification to a scope of two test lengths (packer intervals) in each of four borings (B205, B212, B305, and B330). Boring B212 displayed difficulty in inserting the packers leading to concern about retrieving the packer assembly from the bore hole. Accordingly, Bechtel changed the requested test location from B212 to B201. Bechtel also requested a test length (packer interval) of 10 feet in all the tested borings instead of 5 feet as stated in the Specifications.

The purpose of the packer testing was to establish the coefficient of permeability (also called hydraulic conductivity) of the rock in the packer test length. Tables C-3 through C-6 show the calculated coefficient of permeability from the packer tests. Figures C-1 through C-4 show the flow rate versus pressure. The CD with the test data is included herein.

## 3.0 Water Level Measurements

On June 23, 2006 and again on July 25, 2006, MACTEC representatives checked water levels in 30 of the 31 monitoring wells. OW-501, located inside the existing VC Summer plant, was not monitored as part of this effort, due to the fact that this well was not installed until August 2, 2006. Measurements were made using an electric water level meter and referenced to the notched top of the casing. Water levels recorded are in Table C-7.

**TABLE C-1**
**OBSERVATION WELL CONSTRUCTION DETAILS SUMMARY**
**SCE&G COL PROJECT**
**MACTEC ENGINEERING AND CONSULTING, INC.**
**PROJECT # 6234-06-3534S**

| WELL ID | Well Diameter (inches) | Drilling Method | Boring Diameter (inches) | Ground Surface Elevation (feet, msl) | Top of Casing Elevation (feet, msl) | Top of Bentonite Seal (feet, bgs) | Top of Sand (feet, bgs) | Screened Interval (feet, bgs) | Screen Length (feet) | Sump Length[1] (feet) | Total Well Depth (feet, bgs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OW-205A | 2 | AR | 6 | 423.3 | 425.9 | 76 | 80 | 98.5-108.5 | 10 | 0.5 | 110 |
| OW-205B | 2 | HSA | 6.25 | 422.9 | 425 | 45.9 | 49.9 | 54.9-59.9 | 5 | 0.5 | 60 |
| OW-212 | 2 | HSA | 6.25 | 396.2 | 399.3 | 50 | 53 | 56-66 | 10 | 0.5 | 68 |
| OW-213 | 2 | HSA | 6.25 | 402.1 | 404.5 | 38.5 | 41.5 | 44.75-54.75 | 10 | 0.5 | 55.25 |
| OW-227 | 2 | AR | 6 | 422.7 | 425.1 | 64 | 67 | 71.25-81.25 | 10 | 2.5 | 84.25 |
| OW-233 | 2 | AR | 6 | 426.2 | 428.3 | 70 | 74 | 99-119 | 20 | 0.5 | 120 |
| OW-305A | 2 | AR | 6 | 424.9 | 427.8 | 90 | 95 | 119.5-139.5 | 20 | 0.5 | 141 |
| OW-305B | 2 | AR | 6 | 423.7 | 426.3 | 47 | 51 | 54.5-64.6 | 10 | 0.5 | 66.5 |
| OW-312 | 2 | HSA | 6.25 | 425.1 | 427.1 | 23.3 | 26.4 | 30.5-35.5 | 5 | 0.5 | 36.5 |
| OW-313 | 2 | HSA | 6.25 | 420.9 | 423.8 | 41.1 | 44.1 | 48-58 | 10 | 0.5 | 59 |
| OW-327 | 2 | AR | 6 | 410.7 | 413.4 | 48 | 51.5 | 55-65 | 10 | 0.5 | 66 |
| OW-333 | 2 | AR | 6 | 394.5 | 397.1 | 49 | 52 | 60-70 | 10 | 0.5 | 71 |
| OW-401A | 2 | AR | 6 | 404.1 | 406.3 | 60 | 76 | 80-90 | 10 | 2.5 | 92.5 |
| OW-401B | 2 | MR | 6 | 404.1 | 406.8 | 52 | 57 | 60-65 | 5 | 0.5 | 66 |
| OW-405 | 2 | MR/AR | 6 | 392.6 | 395.4 | 38 | 41 | 44-54 | 10 | 2.5 | 58.5 |
| OW-501 | 2 | MR | 6 | 429.5 | 431.9 | 13 | 17.5 | 20-30 | 10 | 2.5 | 32 |
| OW-612 | 2 | MR | 6 | 406.8 | 409.4 | 41 | 44.5 | 47.5-57.5 | 10 | 2.5 | 62 |
| OW-614 | 2 | MR | 6 | 376.1 | 379.1 | 15.5 | 18.5 | 21.5-31.5 | 10 | 2.5 | 33 |
| OW-617 | 2 | HSA | 6.25 | 447.2 | 450.1 | 89.6 | 93 | 98-108 | 10 | 0.5 | 108 |
| OW-618 | 2 | HSA | 6.25 | 307.4 | 310.5 | 10 | 13.8 | 18.5-28.5 | 10 | 2.5 | 32.5 |
| OW-619 | 2 | AR | 6 | 405.7 | 407.7 | 73.5 | 79.5 | 83-103 | 20 | 0.5 | 104 |
| OW-620 | 2 | MR | 6 | 382.8 | 385 | 71 | 74 | 76.6-86.5 | 10 | 2.5 | 91 |
| OW-621A | 2 | AR | 6 | 420.9 | 423.5 | 74 | 80 | 87.3-97.3 | 10 | 0.5 | 97.3 |
| OW-621B | 2 | HAS/AR | 6.25/6 | 421.2 | 423.6 | 52 | 55 | 60-70 | 10 | 0.5 | 71 |
| OW-622 | 2 | AR | 6 | 438.1 | 440.7 | 40.9 | 44.5 | 48.5-58.5 | 10 | 0.5 | 62 |
| 0W-623 | 2 | AR | 6 | 439.6 | 441.8 | 67.5 | 72 | 76.5-86.5 | 10 | 2.5 | 90 |
| 0W-624 | 2 | AR | 6 | 359.3 | 361.6 | 41.5 | 45 | 48.5-58.5 | 10 | 2.5 | 62 |
| OW-625 | 2 | HSA | 6.25 | 403.2 | 405.9 | 74 | 80.5 | 84.5-104.5 | 20 | 0.5 | 108 |
| OW-626 | 2 | MR | 6 | 416.4 | 418.8 | 55 | 63 | 71-81 | 10 | 2.5 | 85 |
| OW-627A | 2 | AR | 6 | 327.6 | 330.3 | 42 | 64 | 66-86 | 20 | 0.5 | 86 |
| OW-627B | 2 | HSA | 6.25 | 326.9 | 329.5 | 32 | 37 | 43-53 | 10 | 2.5 | 56 |

NOTES:

[1] Sumps with a length of 0.5 inches are generally included as part of the over all screen length.

HSA Hollow stem augers.
AR Air rotary/air hammer drilling method
MR Mud rotary drilling method

TOC Top of the well casing
bgs Below ground surface
msl Mean sea level
NA Not Applicable

Prepared By/Date mfc 1/26/07

Checked By/Date CBS 1/26/07

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# TABLE C-2
# SLUG TEST DATA SUMMARY SHEET
# SCE&G COL PROJECT
# MACTEC ENGINEERING AND CONSULTING, INC.
# PROJECT # 6234-06-3534S

| | Monitoring Well Dimension Data | | | | | | | | | | Aquifer Data | | | Slug Test Type | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WELL ID | Well Diameter (inches) | Drilling Method | Boring Diameter (inches) | Ground Surface Elevation (feet, msl) | Top of Casing Elevation (feet, msl) | Top of Sand (feet, bgs) | Screened Interval (feet, bgs) | Screen Length (feet) | Sump Length[1] (feet) | Total Well Depth (feet, bgs) | Static Water Level[2] (feet, TOC) | Depth of Well Penetration (feet) [4] | Saturated Thickness (feet) [4] | Slug Dimensions | Test Type | Rising Head Maximum Displacement[3] (feet) | Falling Head Maximum Displacement[3] (feet) |
| OW-205A | 2 | AR | 6 | 423.3 | 425.9 | 80 | 98.5-108.5 | 10 | 0.5 | 110 | 68.27 | 44.23 | 44.23 | 1 | B, R, F | 9.13 | 5.125 |
| OW-205B | 2 | HSA | 6.25 | 422.9 | 425 | 49.9 | 54.9-59.9 | 5 | 0.5 | 60 | 59.81 | 2.69 | 2.69 | 2 | B, R | 0.347 | |
| OW-212 | 2 | HSA | 6.25 | 396.2 | 399.3 | 53 | 56-66 | 10 | 0.5 | 68 | 47.95 | 22.55 | 22.55 | 1 | B, R, F | 1.629 | 3.267 |
| OW-213 | 2 | HSA | 6.25 | 402.1 | 404.5 | 41.5 | 44.75-54.75 | 10 | 0.5 | 55.25 | 45.29 | 12.46 | 12.46 | 1 | B, R | 3.265 | |
| OW-227 | 2 | AR | 6 | 422.7 | 425.1 | 67 | 71.25-81.25 | 10 | 2.5 | 84.25 | 63.70 | 23.05 | 23.05 | 2 | B, R, F | 5.406 | 4.434 |
| OW-233 | 2 | AR | 6 | 426.2 | 428.3 | 74 | 99-119 | 20 | 0.5 | 120 | 102.95 | 19.55 | 19.55 | 3 | B, R | 0.792 | |
| OW-305A | 2 | AR | 6 | 424.9 | 427.8 | 95 | 119.5-139.5 | 20 | 0.5 | 141 | 59.64 | 83.86 | 83.86 | 2 | B, R, F | 6.119 | 5.341 |
| OW-305B | 2 | AR | 6 | 423.7 | 426.3 | 51 | 54.5-64.6 | 10 | 0.5 | 66.5 | 58.92 | 10.08 | 10.08 | 1 | B,R | 6.56 | |
| OW-312 | 2 | HSA | 6.25 | 425.1 | 427.1 | 26.4 | 30.5-35.5 | 5 | 0.5 | 36.5 | DRY | NA | NA | NA | NA | NA | NA |
| OW-313 | 2 | HSA | 6.25 | 420.9 | 423.8 | 44.1 | 48-58 | 10 | 0.5 | 59 | 51.05 | 10.45 | 10.45 | 2 | B, R | 2.817 | |
| OW-327 | 2 | AR | 6 | 410.7 | 413.4 | 51.5 | 55-65 | 10 | 0.5 | 66 | 54.25 | 14.25 | 14.25 | 1 | B, R | 3.322 | |
| OW-333 | 2 | AR | 6 | 394.5 | 397.1 | 52 | 60-70 | 10 | 0.5 | 71 | 62.85 | 10.65 | 10.65 | 2 | B, R | 4.369 | |
| OW-401A | 2 | AR | 6 | 404.1 | 406.3 | 76 | 80-90 | 10 | 2.5 | 92.5 | 55.19 | 39.81 | 39.81 | 2 | B, R, F | 6.543 | 3.418 |
| OW-401B | 2 | MR | 6 | 404.1 | 406.8 | 57 | 60-65 | 5 | 0.5 | 66 | 55.80 | 12.70 | 12.70 | 2 | B, R, F | 7.944 | 5.482 |
| OW-405 | 2 | MR/AR | 6 | 392.6 | 395.4 | 41 | 44-54 | 10 | 2.5 | 58.5 | 41.65 | 19.35 | 19.35 | 2 | B, R, F | 3.128 | 5.631 |
| OW-612 | 2 | MR | 6 | 406.8 | 409.4 | 44.5 | 47.5-57.5 | 10 | 2.5 | 62 | 52.05 | 12.45 | 12.45 | 2 | B, R | 2.211 | |
| OW-614 | 2 | MR | 6 | 376.1 | 379.1 | 18.5 | 21.5-31.5 | 10 | 2.5 | 33 | 28.91 | 6.59 | 6.59 | 2 | B, R | 3.45 | |
| OW-617 | 2 | HSA | 6.25 | 447.2 | 450.1 | 93 | 98-108 | 10 | 0.5 | 108 | 100.70 | 9.80 | 9.80 | 2 | B, R | 3.65 | |
| OW-618 | 2 | HSA | 6.25 | 307.4 | 310.5 | 13.8 | 18.5-28.5 | 10 | 2.5 | 32.5 | 7.05 | 27.95 | 27.95 | 2 | B, R, F | 3.548 | 5.243 |
| OW-619 | 2 | AR | 6 | 405.7 | 407.7 | 79.5 | 83-103 | 20 | 0.5 | 104 | 104.00 | 2.50 | 2.50 | 4 | B, R | 1.081 | |
| OW-620 | 2 | MR | 6 | 382.8 | 385 | 74 | 76.6-86.5 | 10 | 2.5 | 91 | 36.98 | 56.52 | 56.52 | 2 | B, R, F | 5.695 | 5.893 |
| OW-621A | 2 | AR | 6 | 420.9 | 423.5 | 80 | 87.3-97.3 | 10 | 0.5 | 97.3 | 97.30 | 2.50 | 2.50 | 1 | B, R | 2.252 | |
| OW-621B | 2 | HAS/AR | 6.25/6 | 421.2 | 423.6 | 55 | 60-70 | 10 | 0.5 | 71 | 54.95 | 18.55 | 18.55 | 2 | B, R, F | 6.438 | 5.44 |
| OW-622 | 2 | AR | 6 | 438.1 | 440.7 | 44.5 | 48.5-58.5 | 10 | 0.5 | 62 | 46.67 | 17.83 | 17.83 | 1 | B, R, F | 5.402 | 4.161 |
| 0W-623 | 2 | AR | 6 | 439.6 | 441.8 | 72 | 76.5-86.5 | 10 | 2.5 | 90 | 72.10 | 20.40 | 20.40 | 2 | B, R, F | 4.569 | 5.66 |
| 0W-624 | 2 | AR | 6 | 359.3 | 361.6 | 45 | 48.5-58.5 | 10 | 2.5 | 62 | 56.67 | 7.83 | 7.83 | 2 | B, R | 5.872 | |
| OW-625 | 2 | HSA | 6.25 | 403.2 | 405.9 | 80.5 | 84.5-104.5 | 20 | 0.5 | 108 | 89.00 | 21.50 | 21.50 | 2 | B, R | 3.272 | |
| OW-626 | 2 | MR | 6 | 416.4 | 418.8 | 63 | 71-81 | 10 | 2.5 | 85 | 49.90 | 37.60 | 37.60 | 2 | B, R, F | 3.959 | 5.872* |
| OW-627A | 2 | AR | 6 | 327.6 | 330.3 | 64 | 66-86 | 20 | 0.5 | 86 | 65.03 | 23.47 | 23.47 | 1 | B, R, F | 4.38 | 4.166** |
| OW-627B | 2 | HSA | 6.25 | 326.9 | 329.5 | 37 | 43-53 | 10 | 2.5 | 56 | 12.39 | 46.11 | 46.11 | 2 | B, R, F | 9.85 | 5.616 |

NOTES:

[1] Sumps with a length of 0.5 inches are generally included as part of the over all screen length.
[2] Static water levels recorded prior to running the slug test.
[3] Water levels has been corrected to reflect total displacement (from time 0).
[4] Survey data not available at the time of this draft report. The correction from bgs to toc assumes a stickup of 2.5 feet for all wells.

HSA Hollow stem augers.
AR Air rotary/air hammer drilling method
MR Mud rotary drilling method
TOC Top of the well casing
bgs Below ground surface
msl Mean sea level
1 Slug weight = 8.40 pounds, diameter = 1.6 inches, length = 5.5 feet
2 Slug weight = 9.09 pounds, diameter = 1.625 inches, length = 5.5 feet
3 Slug weight = 3.94 pounds, diameter = 1.1 inches, length = 4.46 feet
4 Approximately 1/4 gallon (bail well dry).
B Background Test
R Rising Head Test
F Falling Head Test
* Water level corrected using recovery data (last point).
** Water level corrected using field mesurments (see field notes)

Prepared By/Date mfc 1/26/07

Checked By/Date CES 1/26/07

DCN 362Rev2

# TABLE C-3
## B201 Packer Test Results
## SCE&G COL PROJECT
### MACTEC ENGINEERING AND CONSULTING, INC.
### PROJECT # 6234-06-3534S

**Given Parameters**

| | |
|---|---|
| Test Section Length $\ell$, ft: | 10 |
| Radius of Borehole $r_o$, ft: | 0.1667 |
| GW Elevation, ft: | 65 |

**Interval:** 65-75

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4.8 | 3.33 | 22.51 | 8.58 | 0.0000 | 51.95 | - |
| 2 | 0 | 20.5 | 3.05 | 44.71 | 7.46 | 0.0000 | 103.18 | - |
| 3 | 0.4 | 42.4 | 2.83 | 68.31 | 6.83 | 0.0009 | 157.64 | 12 (1) |
| 4 | 0 | 9.4 | 2.62 | 33.67 | 6.45 | 0.0000 | 77.70 | - |
| 5 | 0.467 | 40.4 | 2.44 | 67.99 | 6.45 | 0.0010 | 156.90 | 14 (1) |
| | | | | | | | $K_e$, ft/year | 0 |

**Interval:** 86-96

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 13.97 | 28.94 | 0.703 | 0.0000 | 66.78 | - |
| 2 | 0.3 | 13.9 | 18.37 | 53.49 | 20.37 | 0.0007 | 123.44 | 11 (1) |
| 3 | 6.4 | 42.1 | 14.69 | 79.99 | 19.46 | 0.0143 | 184.59 | 159 (1) |
| 4 | 1 | 0.9 | 12.33 | 40.14 | 17.01 | 0.0022 | 92.63 | 49 |
| 5 | 6 | 42.2 | 10.94 | 79.65 | 18.37 | 0.0134 | 183.81 | 150 (1) |
| | | | | | | | $K_e$, ft/year | 49 |

**Notes:**

Q = flow rate, gallons per minute (GPM)

Test Number, flow rate (GPM) and gauge pressure taken from field measurements. Pressures above, at and below the test section collected via pressure transducers.

$P_g$ is equal to gauge pressure, $P_T$ is pressure above the top packer (psi), $P_M$ is pressure at the test section (psi), $P_B$ is pressure below bottom packer (psi)

$H_M$ is $P_M$ coverted to feet of head ($P_g$*144in$^2$/ft$^2$ / $\gamma_w$)

$K_e$ = ((Q/$H_M$)*(1/$\ell$))*1/2π*ln(R/$r_o$)*(525,600 min/year)*(.1337 ft$^3$/gal)

R is equal to total length between packers, $\ell$

Radius of borehole ($r_o$) taken from outside diameter of boring, 4 inches

Pressure taken from final data point for transducers prior to shut-in test

(1) indicates data beyond the linear range of Q v $H_M$

By: MJD 8/25/06

CK: CES 8/25/06

# TABLE C-4
## B205 Packer Test Results
## SCE&G COL PROJECT
### MACTEC ENGINEERING AND CONSULTING, INC.
### PROJECT # 6234-06-3534S

**Given Parameters**

| | |
|---|---|
| Test Section Length $\ell$, ft: | 10 |
| Radius of Borehole $r_o$, ft: | 0.1667 |
| GW Elevation, ft: | 58.2 |

**Interval:** 59-69

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 5.2 | 5.3 | -0.153 | 21.19 | 4.87 | 0.0116 | 48.90 | 487 |
| 2 | 8.8 | 17.9 | -0.155 | 42.05 | 5.8 | 0.0196 | 97.04 | 415 |
| 3 | 12.8 | 41 | -0.155 | 62.21 | 7.21 | 0.0285 | 143.56 | 408 |
| 4 | 6.2 | 5.7 | -0.156 | 31.43 | 4.52 | 0.0138 | 72.53 | 392 |
| 5 | 12.2 | 41.4 | -0.158 | 63.29 | 6.67 | 0.0272 | 146.05 | 383 |
| | | | | | | | **$K_e$, ft/year** | **417** |

**Interval:** 96-106

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | NR | NR | - | - | - | - | - | - |
| 2 | 0 | NR | 0.8 | 24.06 | 22.09 | 0.0000 | 55.52 | - |
| 3 | 0 | 9.3 | 0.702 | 35.91 | 21.65 | 0.0000 | 82.87 | - |
| 4B | 0 | 43.5 | 0.649 | 82.17 | 23.11 | 0.0000 | 189.62 | - |
| | | | | | | | **$K_e$, ft/year** | **0** |

**Notes:**

Q = flow rate, gallons per minute (GPM)

Test Number, flow rate (GPM) and gauge pressure taken from field measurements. Pressures above, at and below the test section collected via pressure transducers.

$P_g$ is equal to gauge pressure, $P_T$ is pressure above the top packer (psi), $P_M$ is pressure at the test section (psi), $P_B$ is pressure below bottom packer (psi)

$H_M$ is PT coverted to feet of head ($P_g$*144in$^2$/ft$^2$ / $\gamma_w$)

$K_e$ = ((Q/$H_M$)*(1/$\ell$))*1/2π*ln(R/$r_o$)*(525,600 min/year)*(.1337 ft$^3$/gal)

R is equal to total length between packers, $\ell$

Radius of borehole ($r_o$) taken from outside diameter of boring, 4 inches

Pressure taken from final data point for transducers prior to shut-in test

NR = Test 1 not run, Test 2 surface gauge pressure not recorded

By: MKD 8/25/06

CK: CES 8/25/06

# TABLE C-5
## B305 Packer Test Results
## SCE&G COL PROJECT
### MACTEC ENGINEERING AND CONSULTING, INC.
### PROJECT # 6234-06-3534S

**Given Parameters**

| | |
|---|---|
| Test Section Length $\ell$, ft: | 10 |
| Radius of Borehole $r_o$, ft: | 0.1667 |
| GW Elevation, ft: | 57.2 |

**Interval:** 62-72

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 9.7 | 1.27 | 21.06 | 9.55 | 0.0022 | 48.60 | 94 |
| 2 | 1.8 | 14.3 | 1.19 | 41.63 | 9.39 | 0.0040 | 96.07 | 86 |
| 3 | 2.6 | 33.7 | 1.15 | 63.01 | 9.38 | 0.0058 | 145.41 | 82 |
| 4 | 1.4 | 9.3 | 1.07 | 31.59 | 9.32 | 0.0031 | 72.90 | 88 |
| 5 | 2.6 | 34.1 | 1.1 | 62.97 | 9.33 | 0.0058 | 145.32 | 82 |
| | | | | | | | **$K_e$, ft/year** | **86** |

**Interval:** 72-82

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 13.57 | 26.68 | 26.98 | 0.0000 | 61.57 | - |
| 2 | 0 | 20.5 | 8.17 | 46.93 | 24.47 | 0.0000 | 108.30 | - |
| 3 | 0.1 | 42 | 7.14 | 70.88 | 72.93 | 0.0002 | 163.57 | 3 (1) |
| 4 | 0 | 8.8 | 6.16 | 35.14 | 40.91 | 0.0000 | 81.09 | - |
| 5 | 0 | 39.2 | 5.39 | 69.99 | 74.86 | 0.0000 | 161.52 | - |
| | | | | | | | **$K_e$, ft/year** | **0** |

**Notes:**

Q = flow rate, gallons per minute (GPM)

Test Number, flow rate (GPM) and gauge pressure taken from field measurements. Pressures above, at and below the test section collected via pressure transducers.

$P_g$ is equal to gauge pressure, $P_T$ is pressure above the top packer (psi), $P_M$ is pressure at the test section (psi), $P_B$ is pressure below bottom packer (psi)

$H_M$ is PT coverted to feet of head ($P_g$*144in$^2$/ft$^2$ / $\gamma_w$)

$K_e$ = ((Q/$H_M$)*(1/$\ell$))*1/2π*ln(R/$r_o$)*(525,600 min/year)*(.1337 ft$^3$/gal)

R is equal to total length between packers, $\ell$

Radius of borehole ($r_o$) taken from outside diameter of boring, 4 inches

Pressure taken from final data point for transducers prior to shut-in test

(1) indicates data beyond the linear range of Q v $H_M$

By: MJD 8/25/06

CK: CES 8/25/06

# TABLE C-6
## B330 Packer Test Results
## SCE&G COL PROJECT
### MACTEC ENGINEERING AND CONSULTING, INC.
### PROJECT # 6234-06-3534S

**Given Parameters**

| | |
|---|---|
| Test Section Length ℓ, ft: | 10 |
| Radius of Borehole $r_o$, ft: | 0.1667 |
| GW Elevation, ft: | 51.5 |

**Interval:** 57-67

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 3.7 | 5.67 | 18.36 | 14.27 | 0.0000 | 42.37 | - |
| 2 | 0.1 | 16.1 | 3.85 | 38.1 | 9.89 | 0.0002 | 87.92 | 5 |
| 3 | 0.1 | 37.2 | 3.32 | 59.79 | 12.01 | 0.0002 | 137.98 | 3 |
| 4 | 0.2 | 8.3 | 4.81 | 28.74 | 9.24 | 0.0004 | 66.32 | 14 |
| 5 | 0.1 | 33.4 | 2.86 | 58.47 | 8.91 | 0.0002 | 134.93 | 3 |
| | | | | | | | **$K_e$, ft/year** | **5** |

**Interval:** 67-77

| Test Number | Q, GPM | Pg, psi | $P_T$, psi | $P_M$, psi | $P_B$, psi | Q, cfs | $H_M$, ft | $K_e$, fpy |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 7.5 | 0.48 | 21.31 | 16.96 | 0.0000 | 49.18 | - |
| 2 | 2.2 | 13.6 | 0.284 | 43.89 | 12.5 | 0.0049 | 101.28 | 99 |
| 3 | 4.6 | 35.5 | 0.361 | 65.01 | 11.57 | 0.0103 | 150.02 | 140 (1) |
| 4 | 1.4 | 2.2 | 0.233 | 32.53 | 14.01 | 0.0031 | 75.07 | 85 |
| 5 | 4.2 | 34.6 | 0.195 | 64.21 | 13.16 | 0.0094 | 148.18 | 130 (1) |
| | | | | | | | **$K_e$, ft/year** | **92** |

**Notes:**

Q = flow rate, gallons per minute (GPM)

Test Number, flow rate (GPM) and gauge pressure taken from field measurements. Pressures above, at and below the test section collected via pressure transducers.

$P_g$ is equal to gauge pressure, $P_T$ is pressure above the top packer (psi), $P_M$ is pressure at the test section (psi), $P_B$ is pressure below bottom packer (psi)

$H_M$ is PT coverted to feet of head ($P_g$*144in$^2$/ft$^2$ / $\gamma_w$)

$K_e$ = ((Q/$H_M$)*(1/ℓ))*1/2π*ln(R/$r_o$)*(525,600 min/year)*(.1337 ft$^3$/gal)

R is equal to total length between packers, ℓ

Radius of borehole ($r_o$) taken from outside diameter of boring, 4 inches

Pressure taken from final data point for transducers prior to shut-in test

(1) indicates data beyond the linear range of Q v $H_M$

By: MJD 8/25/06

CK: CES 8/25/06

# TABLE C-7
# WATER LEVEL DATA SUMMARY SHEET
# SCE&G COL PROJECT
# MACTEC ENGINEERING AND CONSULTING, INC.
# PROJECT # 6234-06-3534S

| WELL ID | Ground Surface Elevation (feet, msl) | Top of Casing Elevation (feet, msl) | DTW 6/23/2006 (feet, btoc) | DTW 7/25/2006 (feet, btoc) | Water Level Meter Make and Model | Water Level Meter Serial No. |
|---|---|---|---|---|---|---|
| OW-205A | 423.3 | 425.9 | 68.61 | 68.61 | Solinst Model 101 | 41882 |
| OW-205B | 422.9 | 425 | 60.05 | 59.99 | Solinst Model 101 | 41882 |
| OW-212 | 396.2 | 399.3 | 47.90 | 48.25 | Solinst Model 101 | 41882 |
| OW-213 | 402.1 | 404.5 | 45.33 | 45.42 | Solinst Model 101 | 41882 |
| OW-227 | 422.7 | 425.1 | 63.64 | 63.76 | Solinst Model 101 | 41882 |
| OW-233 | 426.2 | 428.3 | 105.85 | 88.45 | Solinst Model 101 | 41882 |
| OW-305A | 424.9 | 427.8 | 59.60 | 59.51 | Solinst Model 101 | 41882 |
| OW-305B | 423.7 | 426.3 | 58.90 | 58.82 | Solinst Model 101 | 41882 |
| OW-312 | 425.1 | 427.1 | DRY | DRY | Solinst Model 101 | 41882 |
| OW-313 | 420.9 | 423.8 | 51.00 | 51.11 | Solinst Model 101 | 41882 |
| OW-327 | 410.7 | 413.4 | 54.17 | 54.25 | Solinst Model 101 | 41882 |
| OW-333 | 394.5 | 397.1 | 63.22 | 62.37 | Solinst Model 101 | 41882 |
| OW-401A | 404.1 | 406.3 | 55.11 | 55.31 | Solinst Model 101 | 41882 |
| OW-401B | 404.1 | 406.8 | 55.76 | 55.94 | Solinst Model 101 | 41882 |
| OW-405 | 392.6 | 395.4 | 41.60 | 41.72 | Solinst Model 101 | 41882 |
| OW-501 | 429.5 | 431.9 | installed 8/2/2006 | installed 8/2/2006 | Solinst Model 101 | 41882 |
| OW-612 | 406.8 | 409.4 | 52.05 | 52.15 | Solinst Model 101 | 41882 |
| OW-614 | 376.1 | 379.1 | 29.18 | 29.95 | Solinst Model 101 | 41882 |
| OW-617 | 447.2 | 450.1 | 100.84 | 100.95 | Solinst Model 101 | 41882 |
| OW-618 | 307.4 | 310.5 | 7.00 | 7.16 | Solinst Model 101 | 41882 |
| OW-619 | 405.7 | 407.7 | 104.66 | 103.81 | Solinst Model 101 | 41882 |
| OW-620 | 382.8 | 385 | 36.91 | 37.20 | Solinst Model 101 | 41882 |
| OW-621A | 420.9 | 423.5 | 97.60 | 95.98 | Solinst Model 101 | 41882 |
| OW-621B | 421.2 | 423.6 | 54.95 | 55.05 | Solinst Model 101 | 41882 |
| OW-622 | 438.1 | 440.7 | 46.70 | 46.76 | Solinst Model 101 | 41882 |
| 0W-623 | 439.6 | 441.8 | 72.10 | 72.16 | Solinst Model 101 | 41882 |
| 0W-624 | 359.3 | 361.6 | 59.13 | 54.05 | Solinst Model 101 | 41882 |
| OW-625 | 403.2 | 405.9 | 88.95 | 88.79 | Solinst Model 101 | 41882 |
| OW-626 | 416.4 | 418.8 | 49.87 | 49.99 | Solinst Model 101 | 41882 |
| OW-627A | 327.6 | 330.3 | 71.75 | 62.80 | Solinst Model 101 | 41882 |
| OW-627B | 326.9 | 329.5 | 12.18 | 12.31 | Solinst Model 101 | 41882 |

NOTES:

| | |
|---|---|
| TOC | Top of the well casing |
| bgs | Below ground surface |
| DTW | Depth to Water |
| btoc | Below Top of Casing |
| msl | Mean sea level |
| NA | Not Applicable |

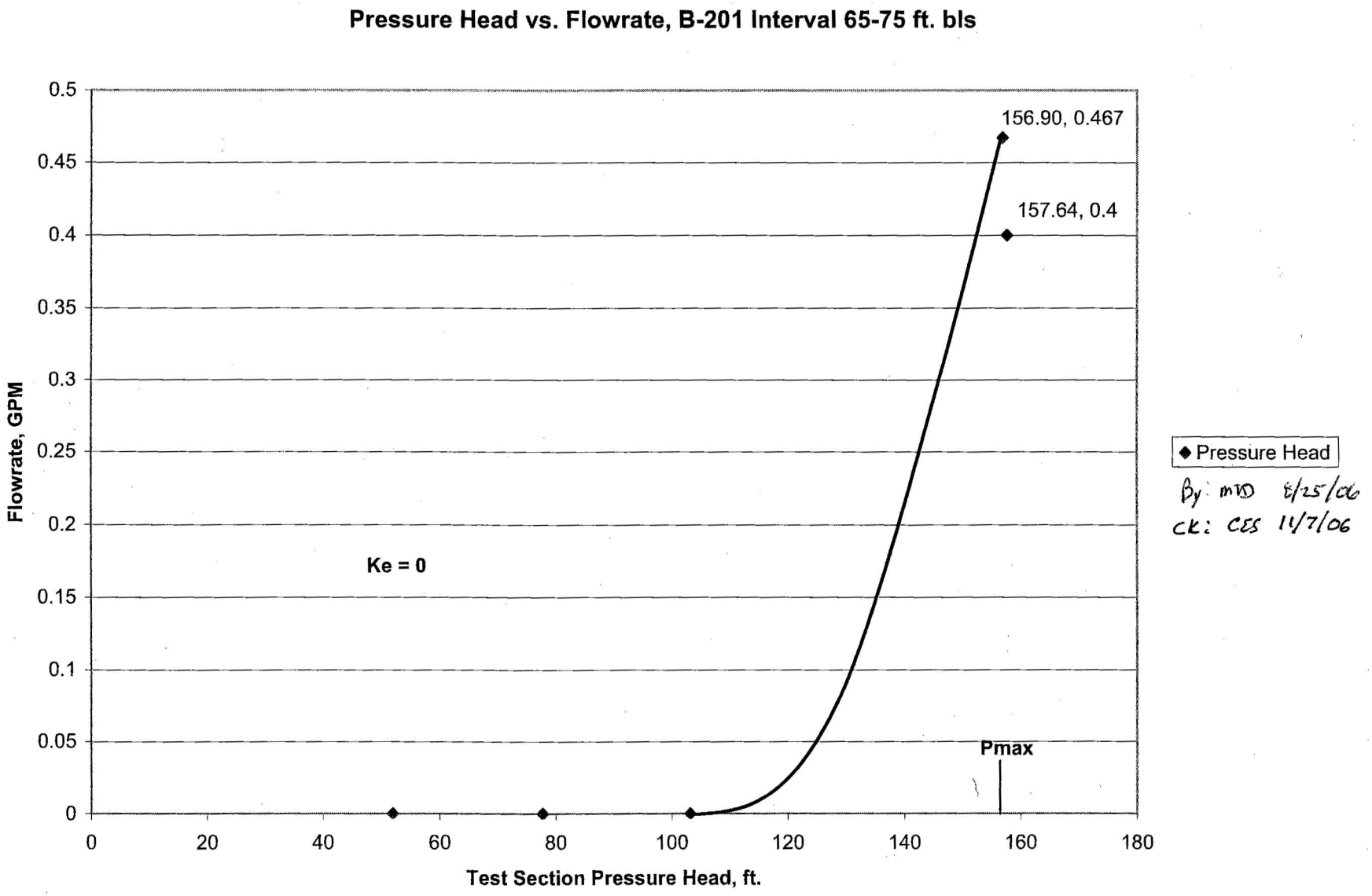
Prepared By/Date
MFC 10/5/06

Checked By/Date
CES 11/7/06

# FINAL REPORT

# ATTACHMENT C

# Figures C-1 through C-4

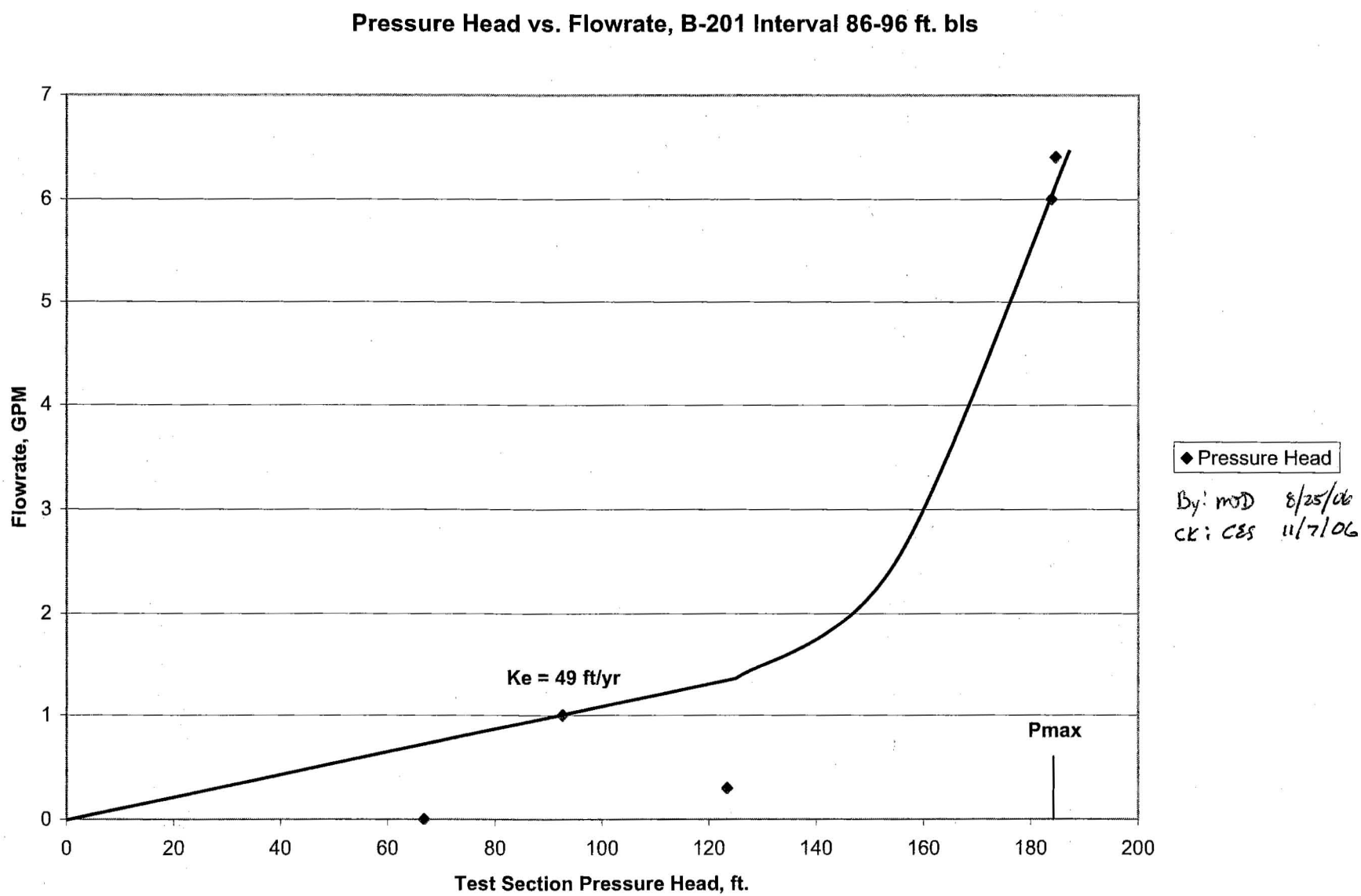



$D_w$ = 65 ft

$P_{max}$ = 65 + (70-65)(0.57)

$P_{max}$ = 67.85 psi = 157 ft

Figure C-1 (1 of 2) B201 Packer Flow Rate vs Pressure

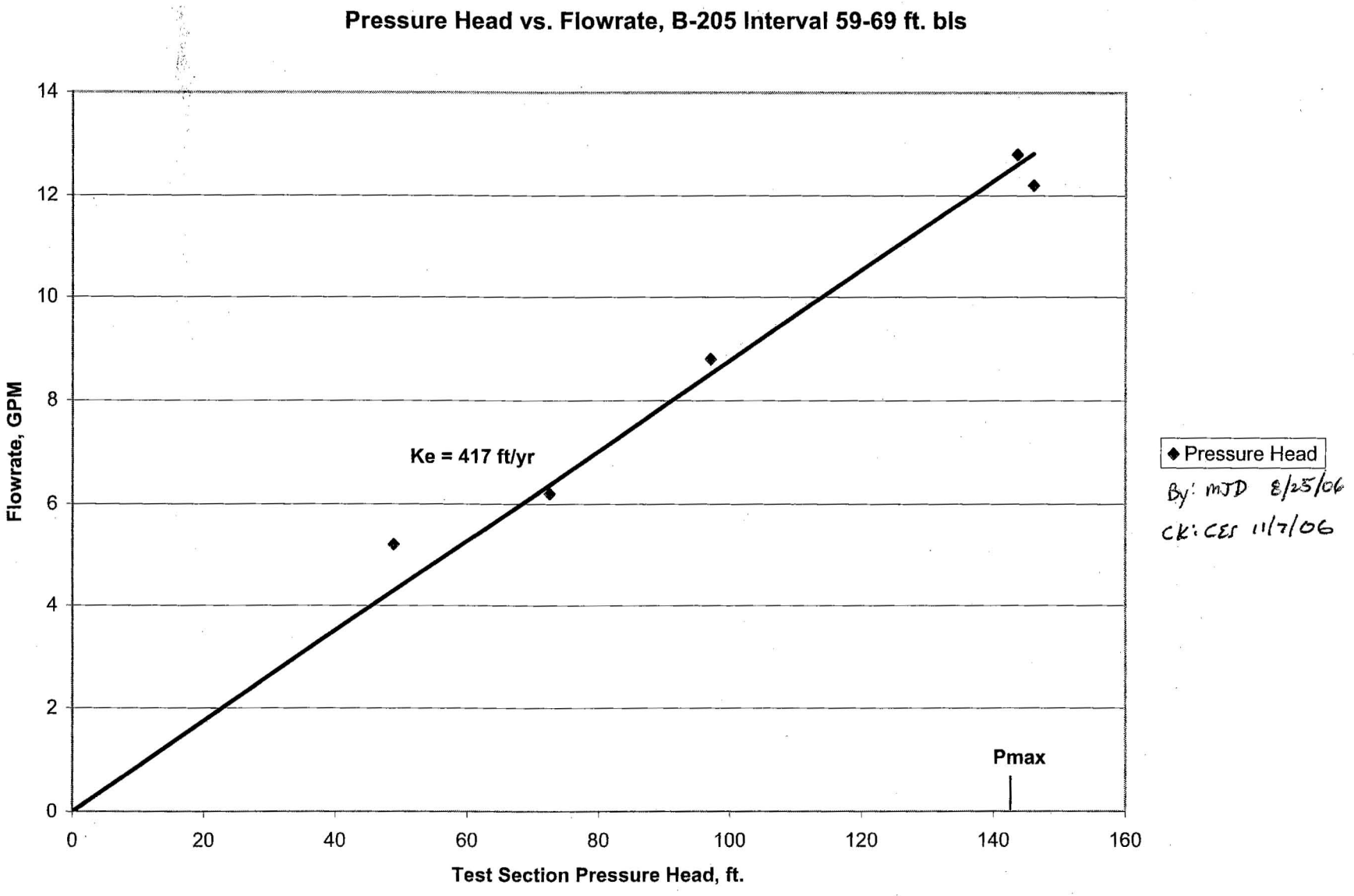



$D_w$ = 65 ft

$P_{max}$ = 65 + (91-65)(0.57)

$P_{max}$ = 79.82 psi = 184 ft

Figure C-1 (2 of 2) B201 Packer Flow Rate vs Pressure

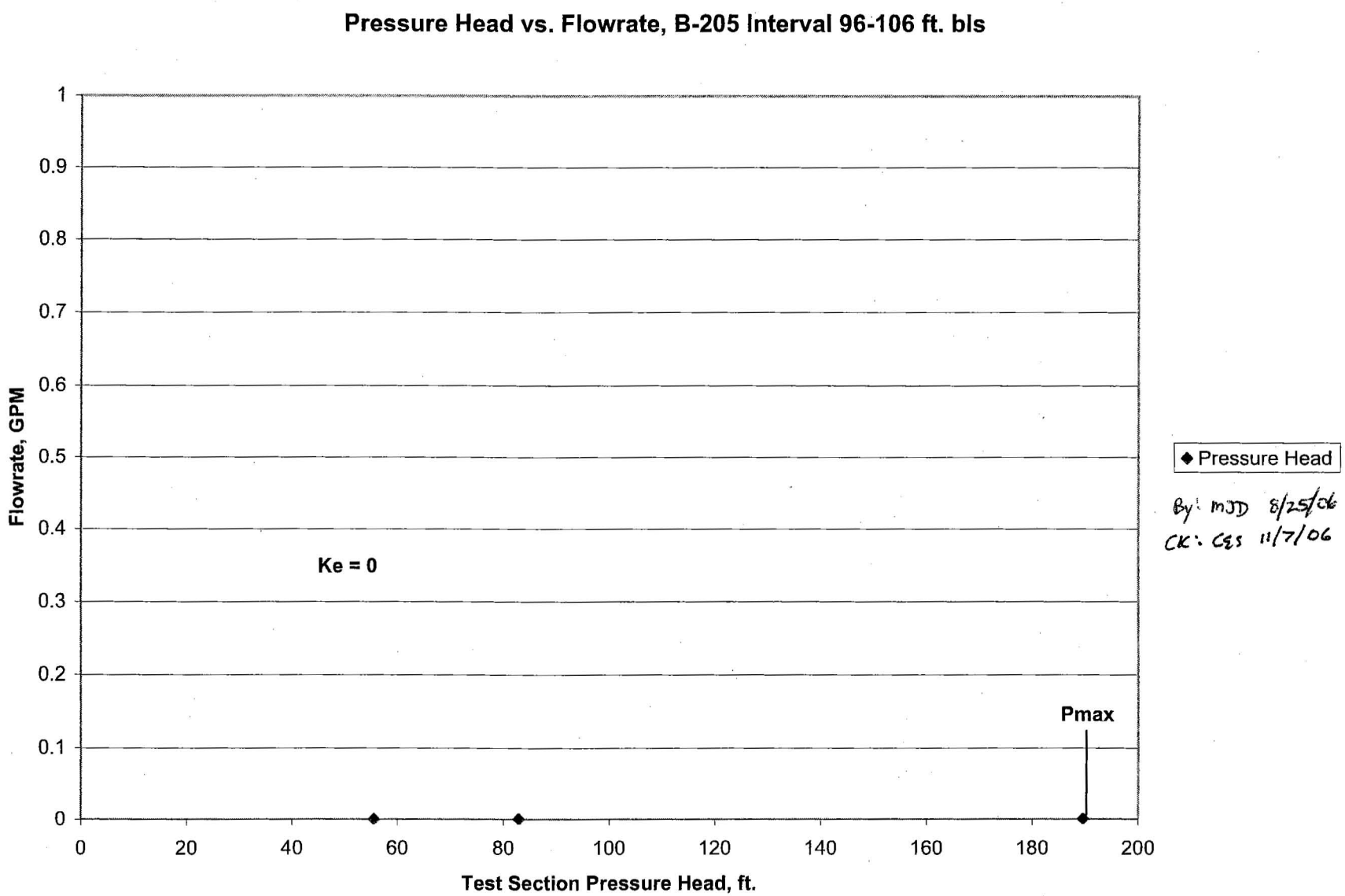



$D_w$ = 58.2 ft

$P_{max}$ = 58.2 + (64-58.2)(0.57)

$P_{max}$ = 61.4 psi = 142 ft

Figurre C-2 (1 of 2) B 205 Packer Flow Rate vs Pressure

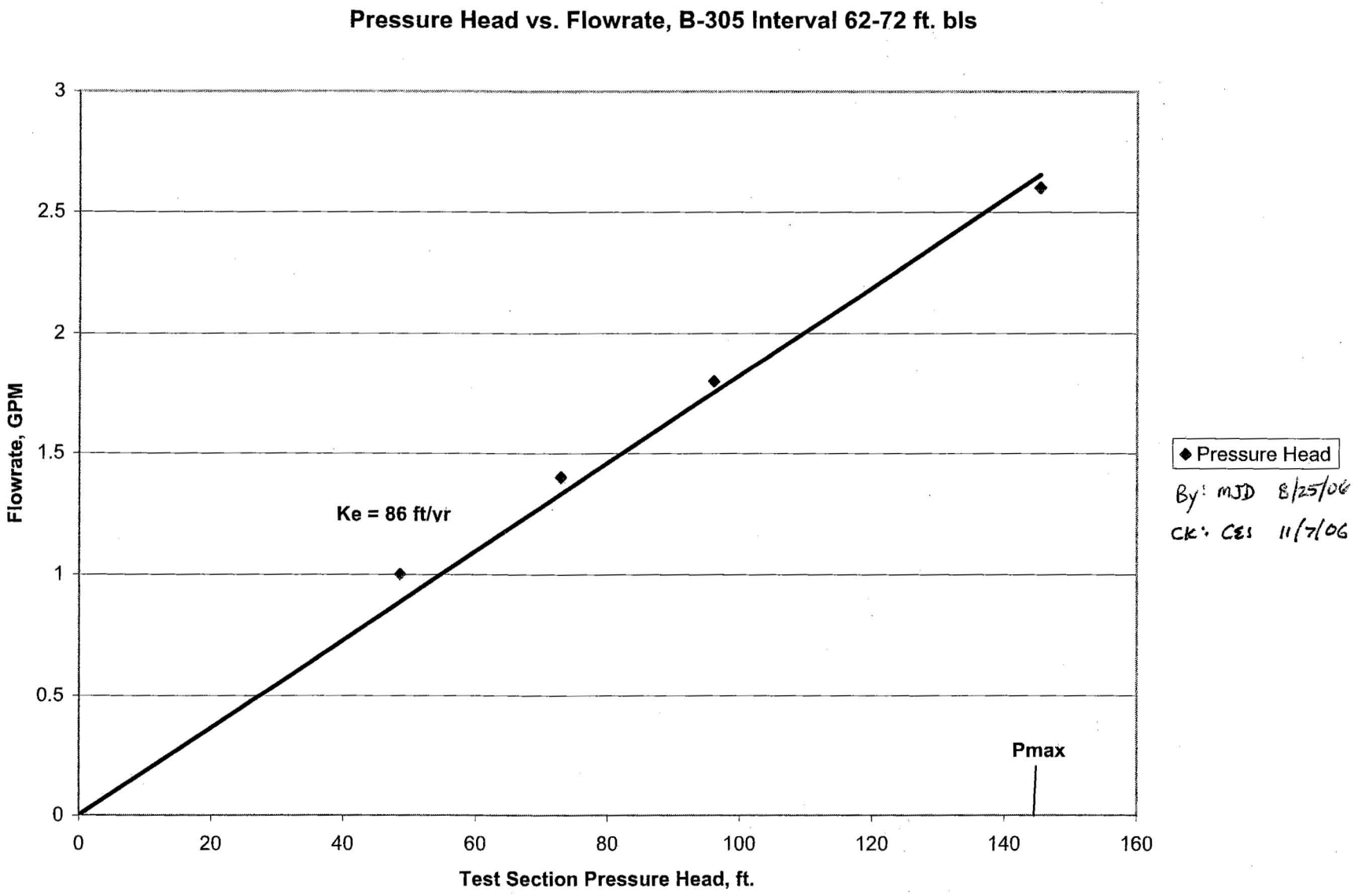



$D_w$ = 58.2 ft

$P_{max}$ = 58.2 + (101-58.2)(0.57)

$P_{max}$ = 82.5 psi = 190 ft

Figure C-2 (2 of 2) B-205 Packer Flow Rate vs Pressure

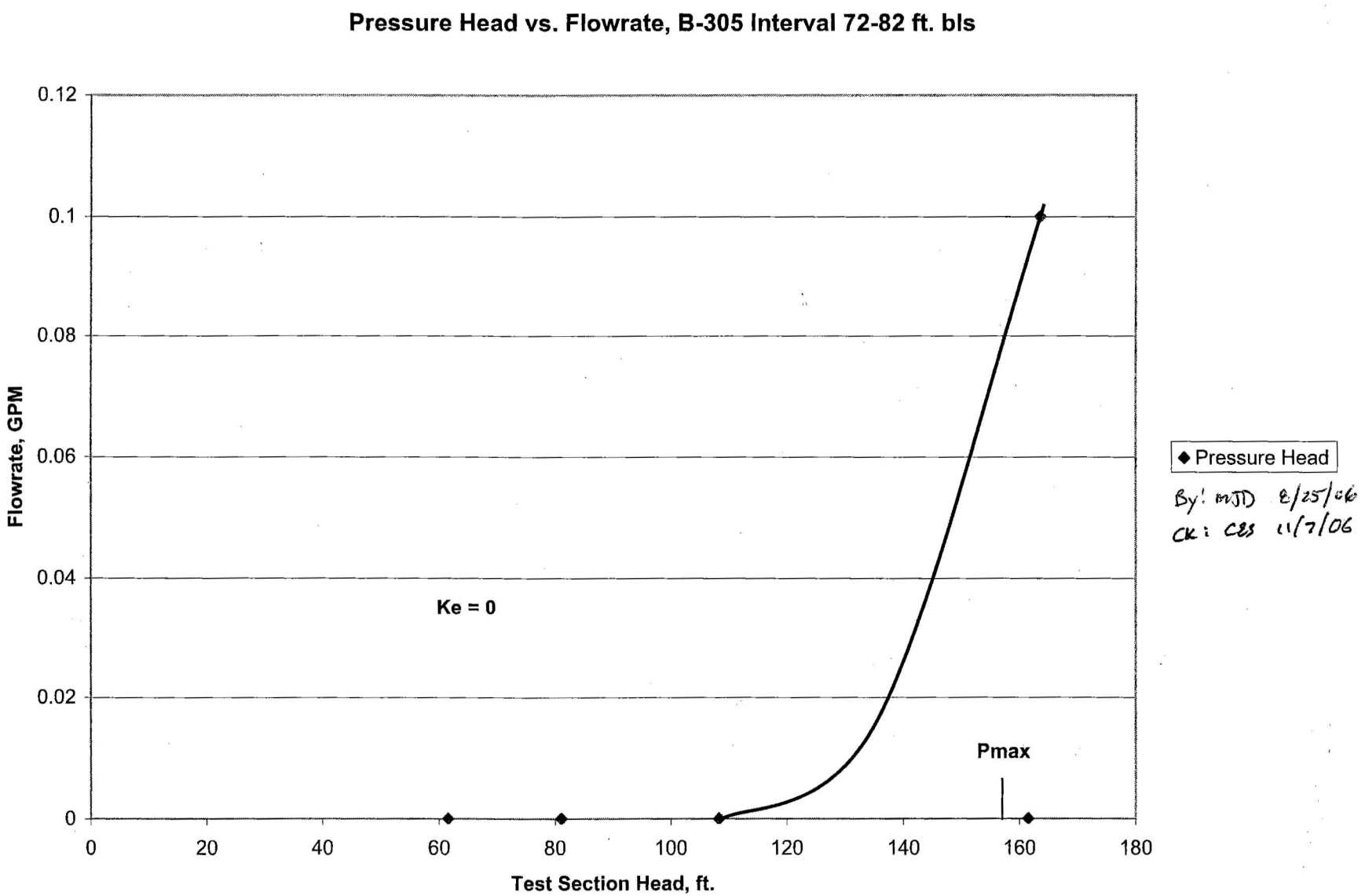



$D_w$ = 57.2 ft

$P_{max}$ = 57.2 + (67-57.2)(0.57)

$P_{max}$ = 62.7 psi = 145 ft

Figure C-3(1 of 2) B-305 Packer Flow Rate vs Pressure

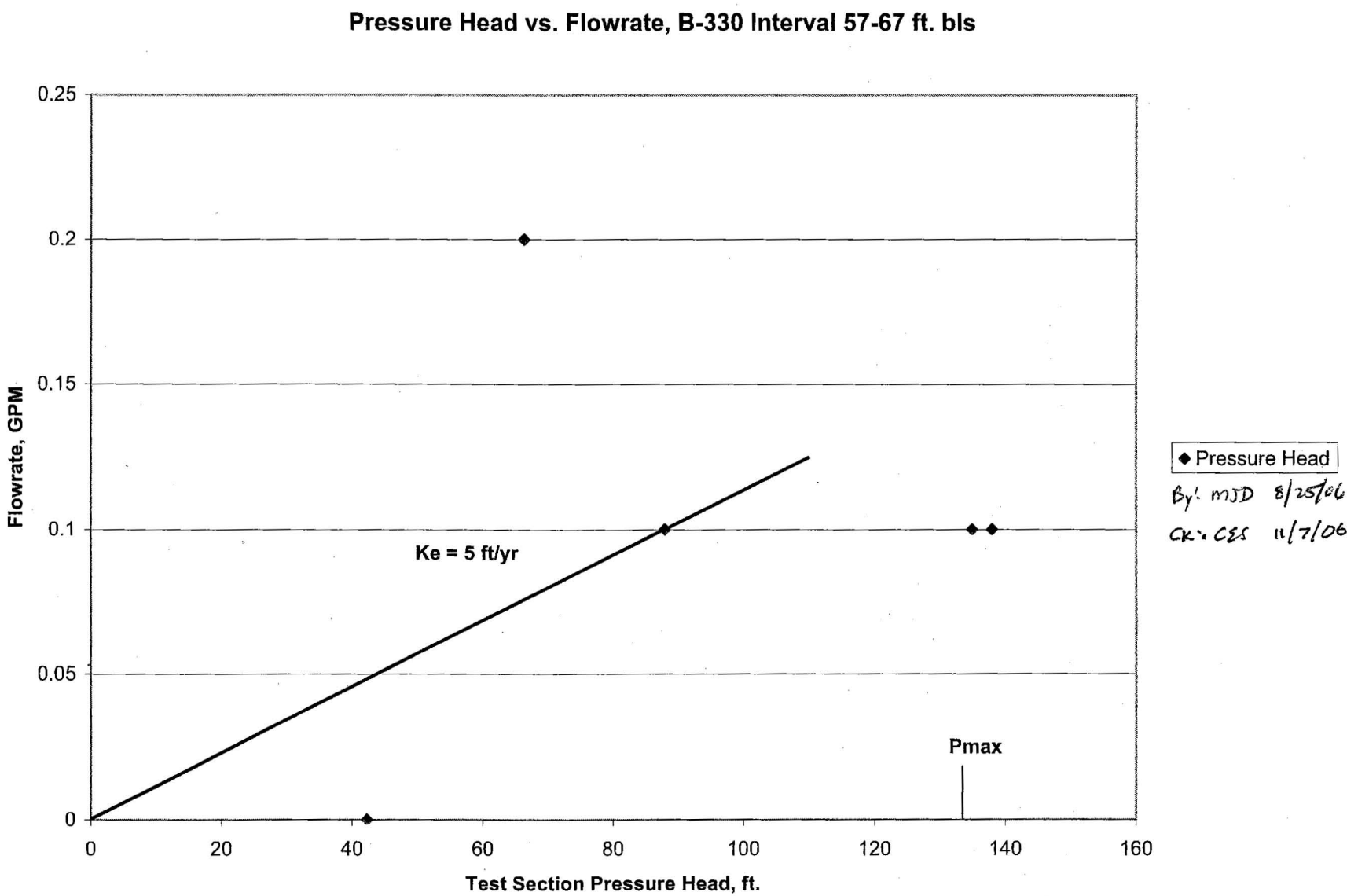



$D_w$ = 57.2 ft

$P_{max}$ = 57.2 + (77-57.2)(0.57)

$P_{max}$ = 68.4 psi = 158 ft

Figure C-3 (2 of 2) B-305 Packer Flow Rate vs Pressure

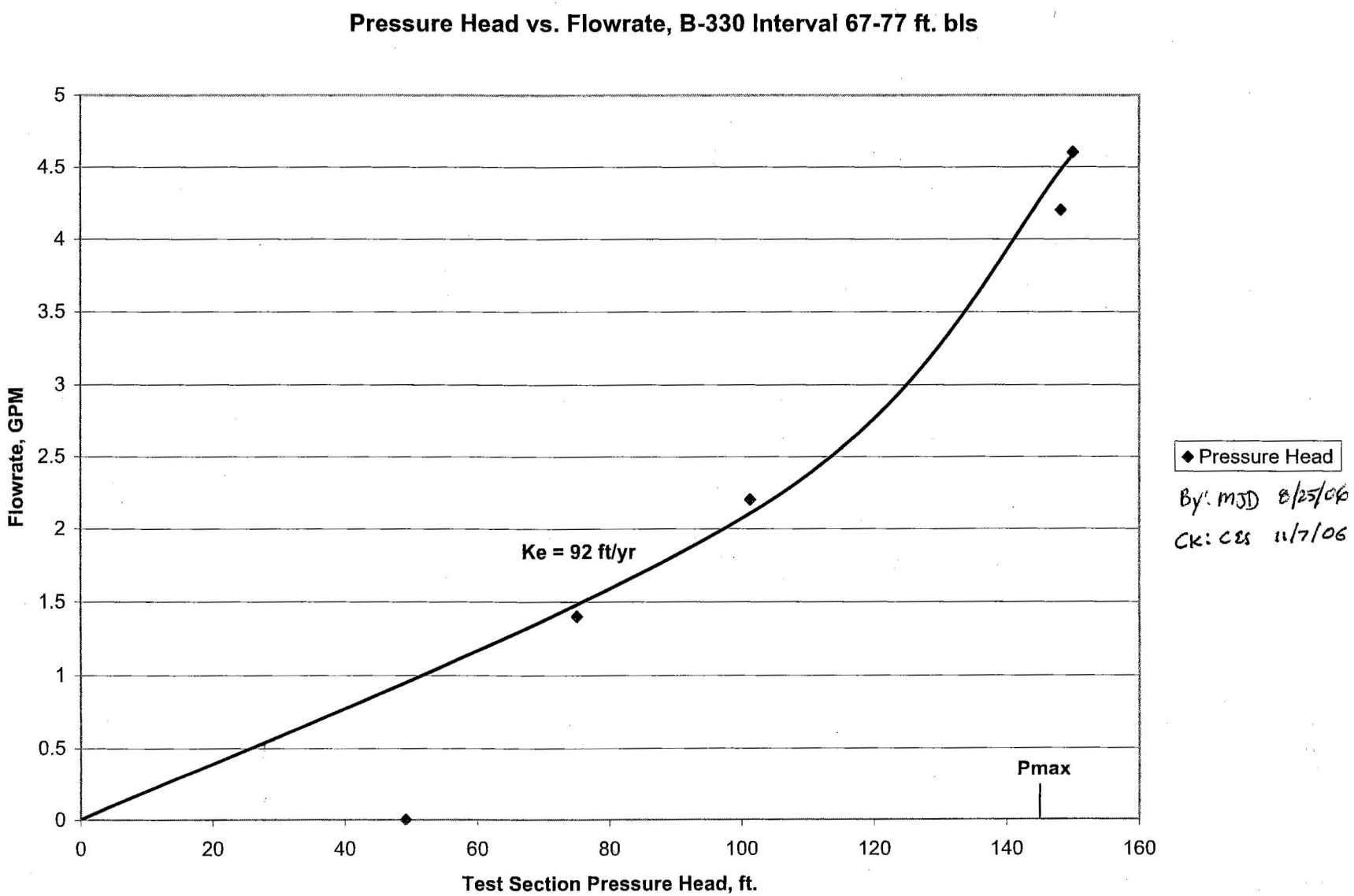



$D_w$ = 51.5 ft

$P_{max}$ = 51.5+ (62.5-51.5)(0.57)

$P_{max}$ = 57.5 psi = 133 ft

Figure C-4 (1 of 2) B-330 Packer Flow Rate vs Pressure




$D_w$ = 51.5 ft

$P_{max}$ = 51.5 + (72.5-51.5)(0.57)

$P_{max}$ = 63.2 psi = 146 ft

Figure C-4 (2 of 2) B-330 Packer Flow Rate vs Pressure

# Final Report

# Appendix C-1

# Observation Well Logs

# NOTE ABOUT GROUNDWATER DEPTHS FOR OBSERVATION WELL LOGS IN ATTACHMENT C, APPENDIX C-1

The water depths on these logs are from observations during drilling of the exploratory borings, whose logs are in Attachment B. Because water was introduced during rotary and core drilling, the water depths on the observation well logs may not represent the stabilized water depths. For stabilized water depths at the observation wells, the information in Attachment C, Table C-7 should be consulted.

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-205A

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: Nuclear Island | Total Depth: 175 feet |
| Drilling Contractor and Rig (for Well): Nichols/McCall / IR T3W | Elevation at Boring: 423.1 feet / Ground Water Depth | Depth to Bedrock: 54 feet |
| Sampling Method (Boring): Split Spoon | Elevation at Well: 423.3 feet / No. of Samples: 15 | Date Started (Well): 5/30/06 |
| | Borehole Inclination: 0 / Logged by: B. Sharp | Date Completed (Well): 5/30/06 |

Reviewed by / Date: M. Cooke 6/11/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 4 | 14/18 | | | | | CL-ML | CLAY silty (CL-ML); red (2.5 YR 4/8); damp, medium stiff; fine sand 5%; small roots, small rock fragments. RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Started drilling 5/1/06 Residuum |
| 2–3 | | SPT 2 | 4 4 8 | 14/18 | | | | | ML | SILT sandy (ML); red (2.5 YR 4/8); damp, stiff; 22% sand; RESIDUUM | |
| 4–5 | | SPT 3 | 3 4 6 | 4/18 | | | | | | SAA, large rock fragment, wet | Rock clogged SPT sampler opening |
| 6–7 | | SPT 4 | 3 4 5 | 16/18 | | | | | | SILT sandy (ML); dark red (2.5 YR 3/2); moist, stiff, 29% sand; RESIDUUM | |
| 9–10 | | SPT 5 | 2 4 5 | 14/18 | | | | | | | |
| 12 | | SPT 6 | 2 3 7 | 14/18 | | | | | | SILT sandy (ML); red (2.5 YR 4/8); moist; stiff; 35% sand; RESIDUUM | |
| 14–15 | | SPT 7 | 2 3 5 | 13/18 | | | | | | SILT (ML); SAA except red and yellow (2.5 YR 4/8 and 2.5 YR 7/8); medium stiff | |
| 19–20 | | SPT 8 | 2 4 5 | 15/18 | | | | | | SILT sandy (ML); strong brown (7.5 YR 5/8); moist; stiff; 38% sand; micaceous. RESIDUUM | |
| 24–25 | | SPT 9 | 6 8 10 | 17/18 | | | | | SM | SAND silty (SM); yellowish red (5 YR 4/6); moist; medium dense; 40% fines; low plasticity; micaceous. RESIDUUM | |
| 29–30 | | SPT 10 | 13 18 10 | 14/18 | | | | | SM | SAND silty with gravel (SM); yellowish red (5 YR 4/6); moist; medium dense; 34% fines, 15% gravels, low plasticity; 1 to 3 cm sized rock fragments, weathered schist, micaceous. RESIDUUM | |
| 34–35 | | SPT 11 | 21 13 10 | 8/18 | | | | | GW-GM | GRAVEL sandy with silt (GW-GM); red (silt) (2.5 YR 5/6), black (gravel) (Glay 1 2.5 /N), wet, micaceous, 30% sand, 7% fines, 1 to 4 cm sized weathered schist. | Rig jumping |
| 39–40 | | SPT 12 | 26 21 16 | 0/18 | | | | | | NO RECOVERY | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-205A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | NO RECOVERY<br>*(Continued from previous page)* | Saprolite<br>End of day 5/1/06, water level at 5 ft.<br>Begin of day 5/2/06, cave in at 35 ft | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 6 6 10 | 13/18 | | | | | SM | SAND silty (SM); strong brown (7.5 YR 5/8); moist, medium dense, 38% fines, 4% gravels, micaceous, low plasticity, weathered schist. SAPROLITE | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 8 12 14 | 15/18 | | | | | | SAND silty (SM); micaceous; 44% fines, 11% gravels | | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | SPT 15 | 50/6 | 0/6 | | | | | | NO RECOVERY. PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 54.0 ft. see rock log | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | |
| 62 | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | |
| 64 | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | | | | | | | | | | | | |
| 68 | | | | | | | | | | | | |
| 69 | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | |
| 71 | | | | | | | | | | | | |
| 72 | | | | | | | | | | | | |
| 73 | | | | | | | | | | | | |
| 74 | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | |
| 77 | | | | | | | | | | | | |
| 78 | | | | | | | | | | | | |
| 79 | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-205A

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Air Rotary / 6 inch | Nuclear Island | | 175 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Nichols/McCall / IR T3W | 423.1 feet | | 54 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 4 / 54 feet | 423.3 feet | 9 | 5/30/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | B. Sharp | 5/30/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 54–55 | 1 | 0.0 / 1.0 | 0 | CW | R0 | | | NO RECOVERY | Partially weathered rock Spoon refusal. Switch to HQ rock coring |
| 55–60 | 2 | 1.5 / 5.0 | 12 | HW; CW | R2 to R3; R0 | | | QUARTZ DIORITE; white and very dark gray (Glay 1 8/8, 3/3); granitic texture; some staining | NOTE: Samples and Lithology Information are from adjacent boring. Begin of day 5/8/06, water level at 45 ft. |
| 60–65 | 3 | 3.8 / 5.0 | 52 | HW; F | R2; R4 | | | QUARTZ DIORITE; SAA; igneous texture; Granodiorite zone | |
| 65–70 | 4 | 4.9 / 5.0 | 98 | F | R4 to R5 | | | | |
| 70–75 | 5 | 5.0 / 5.0 | 100 | F | R4 to R5 | | | Quartz dike | End of day 5/8/06, water level at 23 ft. Begin of 5/9/06, water level at 56 ft. |
| 75–80 | 6 | 5.0 / 5.0 | 100 | F | R4 to R5 | | | | |
| 80–85 | 7 | 2.5 / 5.0 | 42 | F; MW; HW | R5; R1 | | | No recovery from 82.5 to 85 ft | Drilling rate increased, highly weathered rock was not recovered from 82.5 to 85 ft. Top of sound rock? |
| 85–90 | 8 | 5.0 / 5.0 | 90 | F | R4 to R5 | | | Large quartz dike | |
| 90–94 | 9 | 5.0 / 5.0 | 90 | F | R4 to R5 | | | SAA, foliation at 94° | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-205A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 94–95 | | | | | | | | | |
| 95–100 | 10 | 5.0/5.0 | 96 | F | R4 to R5 | | | Quartz dike<br>Quartz dike | |
| 100–105 | 11 | 5.0/5.0 | 80 | F | R4 to R5 | | | HORNBLENDE GNEISS; greenish gray, light gray, very dark gray (Gley 1 7/N, 3/N, 5/5GY); foliation at 35°, hornblende, schist | |
| 105–110 | 12 | 5.0/5.0 | 92 | F | R4 to R5 | | | Foliation at 35° | |
| 110–115 | 13 | 5.0/5.0 | 100 | F | R4 to R5 | | | SAA, hornblende, schist, quartz, feldspar<br>Quartz dike | |
| 115–120 | 14 | 5.0/5.0 | 100 | F | R4 to R5 | | | Quartz dike | |
| 120–125 | 15 | 5.0/5.0 | 100 | F | R4 | | | QUARTZ DIORITE with zones of HORNBLENDE GNEISS and Granodiorite; greenish gray, light gray, very dark gray. (Gley 1 7/N, 3/N, 5/5GY), flow and texture, breccia, texture from 121 to 122.5 ft. fine to medium grained, quartz, hornblende, schist, feldspar, bi<br>Breccia texture 121 to 122.5 ft<br>Quartz dike | |
| 125–130 | 16 | 5.0/5.0 | 100 | F | R5 | | | HORNBLENDE GNEISS with zone of QUARTZ DIORITE (125 to 125.5 ft); greenish gray, light gray, and very dark gray (Gley 7/N, 3/N, 5/5GY); fine grained foliation at 30°. Hornblende, biotite, schist, quartz. | End of day 5/9/06, water level at 15 ft.<br>Begin of day 5/10/06, water level at 58 ft. |
| 130–134 | 17 | 5.0/5.0 | 100 | F | R5 | | | Quartz dike | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-205A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 134–135 | | | | | | | | | | |
| 136–138 | 18 | 5.0/5.0 | 100 | F | R5 | | | Granodiorite dike fine to medium grained<br>Granodiorite dike | | |
| 139–143 | 19 | 5.0/5.0 | 96 | F | R4 to R5 | | | MIGMATITE; mixture of Granodiorite schist and Gneiss; light gray, very dark gray and black (Glay 1 7/N, 3/N, 2.5/N); fine to medium grained; some foliation at 15° (142 ft), flowing texture from 140 to 143 ft, then igneous texture from 143 to 145 ft; quart | | |
| 144–148 | 20 | 5.0/5.0 | 100 | F | R5 | | | MIGMATITE; mixture of granodiorite, hornblende gneiss; black, light gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained; flowing texture; quartz, biotite, schist, K-spar, hornblende. | | |
| 149–153 | 21 | 5.0/5.0 | 100 | F | R5 | | | QUARTZ DIORITE; light gray, very dark gray (Gley 1 7/N, 3/N); fine to medium grained; igneous texture; quartz, biotite, schist, K-spar, hornblende.<br>Quartz dike | | |
| 154–158 | 22 | 5.0/5.0 | 100 | F | R5 | | | QUARTZ DIORITE with zones of Hornblende Gneiss; greenish gray, light, very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained; some foliation 15°, hornblende, quartz, biotite, schist | | |
| 159–163 | 23 | 5.0/5.0 | 100 | F | R4 to R5 | | | HORNBLENDE GNEISS; greenish gray, light gray, and very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained, foliation at 30°, hornblende, quartz, feldspar, biotite, schist.<br>Pegmatite dikes<br>Pegmatite dikes | End of day 5/10/06, water level at 5 ft.<br>Begin of day 5/11/06, water level at 58 ft. | |
| 164–168 | 24 | 5.0/5.0 | 100 | F | R5 | | | Pegmatite dikes | | |
| 169–173 | 25 | 5.0/5.0 | 100 | F | R5 | | | HORNBLENDE GNEISS; fine grained, banded texture, foliation at 30°<br>CORING TERMINATED AT 175.0 ft. | | |
| 174 | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-205A**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 174 | | | | | | | | | | |
| 175 | | | | | | | | | Boring terminated at 175 ft. on 5/11/06, water level at 10 ft | |
| 176 | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-205B

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Hollow Stem Auger / 6.25 inch | Boring Location: Nuclear Island | Total Depth: 175 feet |
| Drilling Contractor and Rig (for Well): Poole/Gregg / Rhino | Elevation at Boring: 423.1 feet; Ground Water Depth: | Depth to Bedrock: 54 feet |
| Sampling Method (Boring): Split Spoon | Elevation at Well: 422.9 feet; No. of Samples: 15 | Date Started (Well): 5/15/06 |
| | Borehole Inclination: 0; Logged by: M. Cooke | Date Completed (Well): 5/15/06 |

Reviewed by / Date: M. Cooke 5/15/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 4 | 14/18 | | | | | CL-ML | CLAY silty (CL-ML); red (2.5 YR 4/8); damp, medium stiff; fine sand 5%; small roots, small rock fragments. RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Started drilling 5/1/06 Residuum |
| 2–3 | | SPT 2 | 4 4 8 | 14/18 | | | | | ML | SILT sandy (ML); red (2.5 YR 4/8); damp, stiff; 22% sand; RESIDUUM | |
| 4–5 | | SPT 3 | 3 4 6 | 4/18 | | | | | | SAA, large rock fragment, wet | Rock clogged SPT sampler opening |
| 6–7 | | SPT 4 | 3 4 5 | 16/18 | | | | | | SILT sandy (ML); dark red (2.5 YR 3/2); moist, stiff, 29% sand; RESIDUUM | |
| 9–10 | | SPT 5 | 2 4 5 | 14/18 | | | | | | | |
| 11–12 | | SPT 6 | 2 3 7 | 14/18 | | | | | | SILT sandy (ML); red (2.5 YR 4/8); moist; stiff; 35% sand; RESIDUUM | |
| 14–15 | | SPT 7 | 2 3 5 | 13/18 | | | | | | SILT (ML); SAA except red and yellow (2.5 YR 4/8 and 2.5 YR 7/8); medium stiff | |
| 19–20 | | SPT 8 | 2 4 5 | 15/18 | | | | | | SILT sandy (ML); strong brown (7.5 YR 5/8); moist; stiff; 38% sand; micaceous. RESIDUUM | |
| 22–23 | | | | | | | | | SM | SAND silty (SM); yellowish red (5 YR 4/6); moist; medium dense; 40% fines; low plasticity; micaceous. RESIDUUM | |
| 24–25 | | SPT 9 | 6 8 10 | 17/18 | | | | | | | |
| 27–28 | | | | | | | | | SM | SAND silty with gravel (SM); yellowish red (5 YR 4/6); moist; medium dense; 34% fines, 15% gravels, low plasticity; 1 to 3 cm sized rock fragments, weathered schist, micaceous. RESIDUUM | |
| 29–30 | | SPT 10 | 13 18 10 | 14/18 | | | | | | | |
| 34–35 | | SPT 11 | 21 13 10 | 8/18 | | | | | GW | GRAVEL sandy with silt (GW); red (silt) (2.5 YR 5/6), black (gravel) (Glay 1 2.5 /N), wet, micaceous, 30% sand, 7% fines, 1 to 4 cm sized weathered schist. | Rig jumping |
| 39–40 | | SPT 12 | 26 21 16 | 0/18 | | | | | | NO RECOVERY | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-205B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | NO RECOVERY *(Continued from previous page)* | Saprolite<br>End of day 5/1/06, water level at 5 ft.<br>Begin of day 5/2/06, cave in at 35 ft | |
| 44–45 | | SPT 13 | 6 6 10 | 13/18 | | | | | SM | SAND silty (SM); strong brown (7.5 YR 5/8); moist, medium dense, 38% fines, 4% gravels, micaceous, low plasticity, weathered schist. SAPROLITE | | |
| 46–48 | | | | | | | | | | | | |
| 49–50 | | SPT 14 | 8 12 14 | 15/18 | | | | | | SAND silty (SM); micaceous; 44% fines, 11% gravels | | |
| 51–53 | | | | | | | | | | | | |
| 54–56 | | SPT 15 | 50/6 | 0/6 | | | | | | NO RECOVERY. PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 54.0 ft. see rock log | | |
| 57–80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-205B

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring: Hollow Stem Auger / 6.25 inch | Boring Location: Nuclear Island | | Total Depth: 175 feet |
| Drilling Contractor and Rig: Poole/Gregg / Rhino | Elevation at Boring: 423.1 feet | Ground Water Depth | Depth to Bedrock: 54 feet |
| Casing Size and Depth (Boring): 4 / 54 feet | Elevation at Well: 422.9 feet | No. of Core Boxes: 9 | Date Started: 5/15/06 |
| | Borehole Inclination: 0 | Logged by: M. Cooke | Date Completed: 5/15/06 |

Reviewed by / Date: M. Cooke 5/15/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 54–55 | 1 | 0.0 / 1.0 | 0 | CW | R0 | | | NO RECOVERY | Partially weathered rock<br>Spoon refusal. Switch to HQ rock coring<br>NOTE: Samples and Lithology Information are from adjacent boring.<br>Begin of day 5/8/06, water level at 45 ft. | |
| 55–60 | 2 | 1.5 / 5.0 | 12 | HW<br>CW | R2 to R3<br>R0 | | | QUARTZ DIORITE; white and very dark gray (Glay 1 8/8, 3/3); granitic texture; some staining | | |
| 60–65 | 3 | 3.8 / 5.0 | 52 | HW<br>F | R2<br>R4 | | | QUARTZ DIORITE; SAA; igneous texture<br>Granodiorite zone | | |
| 65–70 | 4 | 4.9 / 5.0 | 98 | F | R4 to R5 | | | | | |
| 70–75 | 5 | 5.0 / 5.0 | 100 | F | R4 to R5 | | | Quartz dike | End of day 5/8/06, water level at 23 ft.<br>Begin of 5/9/06, water level at 56 ft. | |
| 75–80 | 6 | 5.0 / 5.0 | 100 | F | R4 to R5 | | | | | |
| 80–85 | 7 | 2.5 / 5.0 | 42 | F<br>MW<br>HW | R5<br>R1 | | | No recovery from 82.5 to 85 ft | Drilling rate increased, highly weathered rock was not recovered from 82.5 to 85 ft.<br>Top of sound rock? | |
| 85–90 | 8 | 5.0 / 5.0 | 90 | F | R4 to R5 | | | Large quartz dike | | |
| 90–94 | 9 | 5.0 / 5.0 | 90 | F | R4 to R5 | | | SAA, foliation at 94° | | |

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-205B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 94–95 | | | | | | | | | | |
| 95–100 | 10 | 5.0/5.0 | 96 | F | R4 to R5 | | | Quartz dike<br>Quartz dike | | |
| 100–105 | 11 | 5.0/5.0 | 80 | F | R4 to R5 | | | HORNBLENDE GNEISS; greenish gray, light gray, very dark gray (Gley 1 7/N, 3/N, 5/5GY); foliation at 35°, hornblende, schist | | |
| 105–110 | 12 | 5.0/5.0 | 92 | F | R4 to R5 | | | Foliation at 35° | | |
| 110–115 | 13 | 5.0/5.0 | 100 | F | R4 to R5 | | | SAA, hornblende, schist, quartz, feldspar<br>Quartz dike | | |
| 115–120 | 14 | 5.0/5.0 | 100 | F | R4 to R5 | | | Quartz dike | | |
| 120–125 | 15 | 5.0/5.0 | 100 | F | R4 | | | QUARTZ DIORITE with zones of HORNBLENDE GNEISS and Granodiorite; greenish gray, light gray, very dark gray. (Gley 1 7/N, 3/N, 5/5GY), flow and texture, breccia, texture from 121 to 122.5 ft. fine to medium grained, quartz, hornblende, schist, feldspar, bi<br>Breccia texture 121 to 122.5 ft<br>Quartz dike | | |
| 125–130 | 16 | 5.0/5.0 | 100 | F | R5 | | | HORNBLENDE GNEISS with zone of QUARTZ DIORITE (125 to 125.5 ft); greenish gray, light gray, and very dark gray (Gley 7/N, 3/N, 5/5GY); fine grained foliation at 30°. Hornblende, biotite, schist, quartz. | End of day 5/9/06, water level at 15 ft.<br>Begin of day 5/10/06, water level at 58 ft. | |
| 130–134 | 17 | 5.0/5.0 | 100 | F | R5 | | | Quartz dike | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-205B**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 134–135 | | | | | | | | | | |
| 136–138 | 18 | 5.0/5.0 | 100 | F | R5 | | | Granodiorite dike fine to medium grained<br>Granodiorite dike | | |
| 139–143 | 19 | 5.0/5.0 | 96 | F | R4 to R5 | | | MIGMATITE; mixture of Granodiorite schist and Gneiss; light gray, very dark gray and black (Glay 1 7/N, 3/N, 2.5/N); fine to medium grained; some foliation at 15° (142 ft), flowing texture from 140 to 143 ft, then igneous texture from 143 to 145 ft; quart | | |
| 144–149 | 20 | 5.0/5.0 | 100 | F | R5 | | | MIGMATITE; mixture of granodiorite, hornblende gneiss; black, light gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained; flowing texture; quartz, biotite, schist, K-spar, hornblende. | | |
| 150–154 | 21 | 5.0/5.0 | 100 | F | R5 | | | QUARTZ DIORITE; light gray, very dark gray (Gley 1 7/N, 3/N); fine to medium grained; igneous texture; quartz, biotite, schist, K-spar, hornblende.<br>Quartz dike | | |
| 155–159 | 22 | 5.0/5.0 | 100 | F | R5 | | | QUARTZ DIORITE with zones of Hornblende Gneiss; greenish gray, light, very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained; some foliation 15°, hornblende, quartz, biotite, schist | | |
| 160–164 | 23 | 5.0/5.0 | 100 | F | R4 to R5 | | | HORNBLENDE GNEISS; greenish gray, light gray, and very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained, foliation at 30°, hornblende, quartz, feldspar, biotite, schist.<br>Pegmatite dikes<br>Pegmatite dikes | End of day 5/10/06, water level at 5 ft.<br>Begin of day 5/11/06, water level at 58 ft. | |
| 165–169 | 24 | 5.0/5.0 | 100 | F | R5 | | | Pegmatite dikes | | |
| 170–173 | 25 | 5.0/5.0 | 100 | F | R5 | | | HORNBLENDE GNEISS; fine grained, banded texture, foliation at 30°<br>CORING TERMINATED AT 175.0 ft. | | |
| 174 | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-205B**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 174 | | | | | | | | | | |
| 175 | | | | | | | | | Boring terminated at 175 ft. on 5/11/06, water level at 10 ft | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-212

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Hollow Stem Auger / 6.25 inch | Boring Location: Adjacent to Power Block | Total Depth: 68.5 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Rhino | Elevation at Boring: 397.2 feet / Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring): Standard | Elevation at Well: 396.2 feet / No. of Samples: 20 | Date Started (Well): 5/25/06 |
| | Borehole Inclination: 0 / Logged by: C. Bruce | Date Completed (Well): 5/25/06 |

Reviewed by / Date: M. Cooke 6/11/06
Reviewed by / Date: CES 1/26/07

| Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | SPT 1 | 2 2 5 | 16/18 | | | | SM | **SAND** silty (SM), dark brown, (7.5 YR 3/3); moist, very loose; 70% fine grained sand, 30% fine organic rich roots. | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| | SPT 2 | 5 6 8 | 16/18 | | | | CL-ML | **CLAY** silty (CL-ML); red (10 R 3/6); moist; 50% clay, 45% silt, 5% fine sand. RESIDUUM | |
| | SPT 3 | 5 8 11 | 14/18 | | | | CL-ML | SAA, grading down to sandy clay, red (10 R 4/8) | |
| | SPT 4 | 5 8 11 | 17/18 | | | | SC | **SAND** clayey (SC); red (10 R 4/8); moist, loose to medium dense; 60 to 70 % fine sand; 30 to 40% fines. RESIDUUM | |
| | SPT 5 | 4 8 7 | 18/18 | | | | ML | **SILT** sandy (ML); dark red (2.5 YR 3/6); moist; medium stiff; 65 to 70% silt, 30 to 35 % fine sand, trace clay, micaceous. RESIDUUM | |
| | SPT 6 | 4 3 4 | 18/18 | | | | SM | **SAND** silty (SM); dark reddish brown (2.5 Y 3/4); moist, loose; 60 to 70 % fine sand; 30 to 40 % silt, micaceous; some black manganese staining. | |
| | SPT 7 | 3 4 4 | 18/18 | | | | | SAA, dark brown (7.5 YR 3/4) | On 5/8/06 switched from hollow stem auger to mud rotary 3 7/8 inch tricone bit |
| | SPT 8 | 3 4 4 | 14/18 | | | | ML | **SILT** sandy (ML); strong brown (7.5 YR 5/8) and (7.5 YR 4/6), and black (7.5 YR 2.5/1); moist, medium stiff to stiff, 15 to 25 % fine grained sand, micaceous, with faint thin subhorizontal foliation; abundant black manganese staining; SAPROLITE | |
| | SPT 9 | 4 5 5 | 14/18 | | | | | SAA, reddish brown (5 Y R 4/3); soft to medium stiff; increase in sand content possible sandy silt (25 to 35% fine grained sand) | |
| | SPT 10 | 3 5 8 | 16/18 | | | | SM | **SAND** silty (SM); strong brown (7.5 YR 4/6); medium dense; moist; 60 to 70 % fine sand; 30 to 40 % silt, micaceous; faint relict subhorizontal foliations with black 7.5 YR 2.5/1, manganese staining, SAPROLITE | |
| | SPT 11 | 4 5 6 | 18/18 | | | | | | |
| | SPT 12 | 5 6 6 | 18/18 | | | | | | |

Depth (feet): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-212

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | **SAND** silty (SM); strong brown (7.5 YR 4/6); medium dense; moist; 60 to 70 % fine sand; 30 to 40 % silt, micaceous; faint relict subhorizontal foliations with black 7.5 YR 2.5/1, manganese staining, SAPROLITE *(Continued from previous page)* | |
| 44–45 | | SPT 13 | 4 5 7 | 18/18 | | | | | | **SAND** silty (SM); greenish black (10 GY 2.5/1); grayish green (5 G 4/2); dark yellowish brown (10 YR 4/6); light greenish gray (10 Y 8/1) | |
| 46–48 | | | | | | | | | | | |
| 49–50 | | SPT 14 | 5 5 11 | 18/18 | | | | | | **SAND** silty (SM); strong brown (7.5 YR 5/6) with very dark greenish gray (5 BG 3/1) and greenish black (5 BG 2.5/1) and white (5 Y 8/1) | |
| 51 | | | | | | | | | SM | Very dense sand to PARTIALLY WEATHERED ROCK; amphibolite schist; bluish black (5 PB 2.5/1) with some completely weathered white (10 YR 8/1); feldspar. | 3 7/8 tricone refusal at 51 ft. |
| 52 | | SPT 15 | 20 15 15 | 3/18 | | | | | | | |
| 53 | | SPT 16 | 25 34 50/4 | 7/18 | | | | | | | 2 7/8 tricone refusal at 52.5 ft. |
| 54–55 | | SPT 17 | 13 13 12 | 18/18 | | | | | SM | SAA, strong brown (7.5 YR 4/6) silty sand matrix with zones of completely weathered white feldspar and zones of bluish black amphibolite schist | In both cases above after SPT, bit advanced after previous refusal<br>Able to advance tricone after SPT sampler |
| 56–57 | | | | | | | | | | | |
| 58 | | | | | | | | | SM | **SAND** silty (SM); strong brown (7.5 YR 4/6); white (N 8/1); bluish black (5 PB 2.5/1) and trace black (10 YR 2/1); moist, medium dense; 60 to 70% fine grained sand ; 30 to 40 % fines;PARTIALLY WEATHERED ROCK; structure dipping 10 to 40°; zones of completely weathered granodiorite, zones of completely weathered gneiss and zones of completely weathered amphibolite; SAPROLITE | |
| 59 | | SPT 18 | 26 24 28 | 15/18 | | | | | | | |
| 60–61 | | | | | | | | | | | |
| 62–63 | | | | | | | | | SM | | 7 7/8 tricone refusal at 61 ft |
| 64–65 | | SPT 19 | 12 13 12 | 18/18 | | | | | | Very dense sand to PARTIALLY WEATHERED ROCK; amphibolite schist with saprolitic zones of completely weathered feldspar and biotite, strong brown (7.5 YR 4/6); bluish black (5 PB 2.5/1), and white (10 YR 8/1); moist, medium dense. | |
| 66–67 | | | | | | | | | | | |
| 68 | | | | | | | | | | **SAND** silty (SM); strong brown (7.5 YR 4/6); white (2.5 Y 8/1); bluish black (5 PB 2.5/1); moist; medium dense; 60 to 70 % fine grained sand; 30 to 40% fines; distinct relict irregular flow bonding/foliation; dipping 10 to 25°, white relict feldspar zones with bluish black amphibolite. PARTIALLY WEATHERED ROCK; separated by zones of strong black, micaceous-rich zones; migmatite SAPROLITE. | 5 7/8 tricone refusal on 5/9/06 |
| 69 | | SPT 20 | 50/0 | 0/0 | | | | | | | 2 7/8 tricone refusal at 68.5 ft.<br>5/10/06 lost core barrel; borehole abandoned; see boring B-212A 5 ft ENE of B-212 |
| 70–74 | | | | | | | | | | | |
| 75 | | | | | | | | | | PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 68.5 ft. | |
| 76–80 | | | | | | | | | | | |

WELL

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-213

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Hollow Stem Auger / 6.25 inch | Boring Location: Adjacent to Power Block | Total Depth: 150 feet |
| Drilling Contractor and Rig (for Well): Poole/Gregg / Rhino | Elevation at Boring: 401.5 feet; Ground Water Depth | Depth to Bedrock: 59.2 feet |
| Sampling Method (Boring): Standard | Elevation at Well: 402.1 feet; No. of Samples: 15 | Date Started (Well): 5/30/06 |
| | Borehole Inclination: 0; Logged by: C. Gandy | Date Completed (Well): 5/30/06 |

Reviewed by / Date: M. Cooke 6/11/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 1 2 3 | 1.5/18 | | | | | CL-ML | **CLAY** silty (CL-ML); dark reddish brown (5 YR 3/4); moist; medium stiff; fine to medium grained; medium to high plasticity. RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 2 4 4 | 16/18 | | | | | SM | **SAND** silty (SM); dark reddish brown ( 5 YR 3/4); moist; loose; fine to medium grained; low plasticity; RESIDUUM | |
| 4–5 | | SPT 3 | 3 3 5 | 15/18 | | | | | SC | **SAND** clayey (SC); dark red (10 R 3/6); moist; loose; fine to medium grained; low to medium plasticity; slightly micaceous; RESIDUUM | |
| 6–7 | | SPT 4 | 3 3 5 | 16/18 | | | | | SM | **SAND** silty (SM); dark red (10 R 3/6); moist; medium dense; fine to medium grained; no plasticity; slightly micaceous; RESIDUUM | |
| 9–10 | | SPT 5 | 4 7 11 | 17/18 | | | | | | | |
| 12 | | SPT 6 | 2 4 4 | 13/18 | | | | | SM | SAA; yellowish red (5 YR 4/6); moist; loose; fine to coarse grained | |
| 14–15 | | SPT 7 | 2 3 4 | 12/18 | | | | | SM | **SAND** silty (SM); strong brown (7.5 YR 4/6); moist; loose; fine to coarse grained; no plasticity; slightly micaceous. SAPROLITE | First saprolitic sample |
| 19–20 | | SPT 8 | 2 4 5 | 15/18 | | | | | SM | SAA; moist with gravel | |
| 24–25 | | SPT 9 | 2 3 5 | 16/18 | | | | | SM | **SAND** silty (SM); strong brown (7.5 YR 5/6); moist; loose; fine to medium grained; mottled with black and red; slightly micaceous; no plasticity. SAPROLITE | |
| 29–30 | | SPT 10 | 3 5 6 | 17/18 | | | | | SM | SAA; medium dense | |
| 34–35 | | SPT 11 | 5 6 7 | 15/18 | | | | | SM | **SAND**; silty (SM); strong brown (7.5 YR 5/6); moist; medium dense; fine to medium grained; mottled with black and red; no plasticity. SAPROLITE | |
| 39–40 | | SPT 12 | 6 10 11 | 17/18 | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-213

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–41 | | | | | | | | | | | | |
| 42–43 | | | | | | | | | ML | **SILT** sandy (ML); black (10 YR 2/1); moist; very stiff; fine to medium grained; trace mica; no plasticity; SAPROLITE | End day 5/22/06<br>5/23/06 8:30 am, water level at 32 ft. | |
| 44–45 | | SPT 13 | 4 6 10 | 18/18 | | | | | | | | |
| 46–48 | | | | | | | | | | | | |
| 49–50 | | SPT 14 | 6 9 14 | 18/18 | | | | | | | | |
| 51–52 | | | | | | | | | SM | **SAND** silty (SM); olive brown (2.5 Y 4/3); moist; dense; fine to coarse grained; mottled with black and white; no plasticity; slightly micaceous; SAPROLITE | | |
| 53–54 | | SPT 15 | 10 18 20 | 18/18 | | | | | | | | |
| 55–58 | | | | | | | | | | | | |
| 59–60 | | SPT 16 | 50/1.5 | 0/1.5 | | | | | | No recovery<br>PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 59.2 ft. | Partially weathered rock<br>Drill bit refusal at 58.8 ft.<br>Casing advanced to 59.2 ft | |
| 61–80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-227

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | | Total Depth<br>84.25 feet |
| Drilling Contractor and Rig (for Well)<br>Nichols/McCall / IR T3W | Elevation at Boring<br>425.1 feet | Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>422.7 feet | No. of Samples<br>15 | Date Started (Well)<br>5/25/06 |
| | Borehole Inclination<br>0 | Logged by<br>M. Cooke | Date Completed (Well)<br>5/25/06 |

Reviewed by / Date M. Cooke 5/27/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 9 11 5 | 11/18 | | | | | SM | **SAND** silty (SM); olive gray (5 Y 3/2); moist; medium dense; fine sand, ~20% silt, some rock fragment; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. |
| 2–3 | | SPT 2 | 7 7 9 | 16/18 | | | | | ML | **SILT** sandy (ML); moderate reddish brown (10 R 4/6); moist; very stiff; fine sand ~15%; low plasticity; RESIDUUM | Residuum |
| 4–5 | | SPT 3 | 9 9 9 | 12/18 | | | | | SM | **SAND** silty (SM); pale reddish brown (10 R 5/4); moist; medium dense; fine sand; ~20% silt. SAPROLITE | First saprolitic sample |
| 6–7 | | SPT 4 | 4 5 6 | 0.1/18 | | | | | ML | **SILT** sandy (ML); pale reddish brown (10 R 5/4); moist; stiff; low plasticity; fine sand; ~20% sand; small roots; large rock; SAPROLITE | Rock block sampler |
| 9–10 | | SPT 5 | 5 7 7 | 12/18 | | | | | SM | **SAND** silty (SM); moderate yellowish brown (10 YR 5/4); moist; medium dense; fine sand ~30% fines; SAPROLITE | |
| 12 | | SPT 6 | 5 8 12 | 12/18 | | | | | | | |
| 14–15 | | SPT 7 | 3 2 4 | 8/18 | | | | | ML | **SILT** sandy (ML); pale reddish brown (10 R 5/4); moist; medium stiff; ~10% fine sand; low plasticity; RESIDUUM | Lack saprolitic structure |
| 17–18 | | | | | | | | | SM | **SAND** silty (SM); dark yellowish orange (10 YR 6/6); moist; medium dense; ~45% silt; SAPROLITE | Saprolitic structure reappears |
| 19–20 | | SPT 8 | 5 6 11 | 12/18 | | | | | | | |
| 22–23 | | | | | | | | | ML | **SILT** sandy (ML); moderate yellowish brown (10 YR 5/4); moist; very stiff; fine sand 30%; low plasticity; micaceous; SAPROLITE | |
| 24–25 | | SPT 9 | 8 9 9 | 8/18 | | | | | | | |
| 29–30 | | SPT 10 | 7 9 12 | 12/18 | | | | | | SAA; ~40% sand | |
| 32–33 | | | | | | | | | SM | **SAND** silty (SM); dark yellowish brown (10 YR 6/6); moist; medium dense; 30% silt; micaceous; SAPROLITE | |
| 34–35 | | SPT 11 | 11 13 16 | 12/18 | | | | | | | |
| 37–38 | | | | | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 4/2); moist; very stiff; low; ~55% fine sand; low plasticity; micaceous; SAPROLITE | |
| 39–40 | | SPT 12 | 9 11 16 | 14/18 | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-227

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | **SILT** sandy (ML); dark yellowish brown (10 YR 4/2); moist; very stiff; low; ~55% fine sand; low plasticity; micaceous; SAPROLITE *(Continued from previous page)* | |
| 44–45 | | SPT 13 | 11 13 17 | 16/18 | | | | | | **SILT** sandy (ML); moderate yellowish brown (10 YR 5/4) | |
| 46–48 | | | | | | | | | | | |
| 49–50 | | SPT 14 | 11 12 20 | 14/18 | | | | | | SAA; moderate brown (5 YR 4/4), 60% fine sand; very micaceous; SAPROLITE | |
| 51–52 | | | | | | | | | | | Partially weathered rock |
| 53–54 | | SPT 15 | 17 50/5 | 12/11 | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 4/2); moist; very stiff; fine sand 70% silt; low plasticity; very micaceous; PARTIALLY WEATHERED ROCK | |
| 55 | | | | | | | | | | BORING TERMINATED AT 54.5 ft. | End of drilling 4/13/06, 4/14/06 No groundwater encountered |
| 56–80 | | | | | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG SOIL - Well No. OW-227**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | |
| 81 | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | |
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| 116 | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | |
| 118 | | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |
| 120 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-233

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | Total Depth<br>120 feet |
| Drilling Contractor and Rig (for Well)<br>Nichols/McCall / IR T3W | Elevation at Boring<br>426.1 feet / Ground Water Depth | Depth to Bedrock<br>37.4 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>426.2 feet / No. of Samples<br>11 | Date Started (Well)<br>5/25/06 |
| | Borehole Inclination<br>0 / Logged by<br>M. Cooke | Date Completed (Well)<br>5/25/06 |

Reviewed by / Date M. Cooke 6/11/06

Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 0 1 2 | 13/18 | | | | | SM | **SAND** (SM); red (2.5 YR 5/8); dry; very loose; silty; fine | NOTE: Samples and Lithology Information are from adjacent boring. |
| 1–3 | | SPT 2 | 3 3 3 | 9/18 | | | | | | SAA; orange (5 YR 5/8) and red; loose | |
| 3–5 | | SPT 3 | 4 7 8 | 15/18 | | | | | ML | **SILT** (ML); red and orange (10 R 4/6 and 5 YR 6/8); damp; medium stiff; trace mica | |
| 5–7 | | SPT 4 | 4 4 7 | 14/18 | | | | | SM | **SAND** (SM); dusky red, brown and white (10 R 3/6, 7.5 YR 5/8); moist to damp; medium dense; in 2 to 3 inch bands; silty; trace mica; | |
| 7–9 | | SPT 5 | 8 13 19 | 16/18 | | | | | GM | **GRAVEL** (GM); red (10 R 3/6), brown (1.7 YR 5/8), and gray; damp; dense; weathered granite or granodiorite; split spoon like a rock core; gneiss; SAPROLITE | First saprolitic sample |
| 9–11 | | SPT 6 | 5 7 10 | 17/18 | | | | | SM | **SAND** silty (SM); red and brown (10 R 4/6 and 5 YR 6/8); damp; medium dense; fine; foliated; SAPROLITE | |
| 11–13 | | SPT 7 | 5 6 7 | 13/18 | | | | | | SAA; red (10 R 5/4); damp; medium dense; silty; micaceous; fine to coarse | |
| 13–15 | | SPT 8 | 2 6 7 | 10/18 | | | | | | SAA; brown and red (7.5 YR 5/8 and 10 R 5/6) | |
| 15–17 | | SPT 9 | 2 5 7 | 9/18 | | | | | | SAA; brown, red and beige, as above with manganese staining | |
| 17–19 | | SPT 10 | 3 5 8 | 10/18 | | | | | | SAA; red (10 R 5/6) | |
| 19–21 | | SPT 11 | 3 5 9 | 14/18 | | | | | ML | SAA; beige; damp; medium dense; silty; micaceous<br>**SILT** sandy (ML); orange (7.5 6/8); damp; stiff; sandy; manganese stained<br>Refusal at 37.4 ft, drilled casing to 37.5 ft, see rock log | |

WELL

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-233

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Air Rotary / 6 inch | Adjacent to Power Block | | 120 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Nichols/McCall / IR T3W | 426.1 feet | | 37.4 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 3.5 / 37.5 feet | 426.2 feet | | 5/25/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | M. Cooke | 5/25/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 38–45 | 1 | 7.9/8.0 | 58 | MW | | | | GRANODIORITE; fine grained 3 to 1 mm quartz, orthoclase, biotite<br>Amphibolite schist<br>40.7 to 43 Felsic gneiss<br>GRANODIORITE; biotite and dark minerals; quartz and orthoclase; phaneritic | Tricone refusal 4/13/06; casing drilled to 37.5 ft<br>NOTE: Samples and Lithology Information are from adjacent boring.<br>Lost water return<br>Very low drilling resistance<br>No water return from 41.2 to 41.4 ft<br>Very low drilling resistance 41.8 to 42.2 ft |
| 46–50 | 2 | 5.0/5.0 | 100 | SW<br>F | R3<br>R3 | | | AMPHIBOLITE SCHIST; foliation angle 45° | |
| 51–54 | 3 | 4.9/4.9 | 100 | F | R4 | | | GRANODIORITE biotite, orthoclase and quartz | |
| 55 | | | | | | | | AMPHIBOLITE SCHIST, gneiss | |
| 56–60 | 4 | 4.5/4.6 | 100 | F | R4 | | | GNEISS; biotite; foliated at 43°; flow banded texture; chalcopyrite porphyroblasts.<br>Schist amphibolite xenoliths; migmatite biotite gneiss<br>Igneous texture | |
| 61–65 | 5 | 5.0/5.0 | 100 | F | R5 | | | GRANODIORITE mafics; chalcopyrite<br>AMPHIBOLITE SCHIST; 60° foliation | |
| 66–70 | 6 | 5.0/5.0 | 100 | F | R4 | | | GRANODIORITE; with 2 inch amphibolite schist xenoliths | |
| 71 | | | | | | | | GNEISS, chalcopyrite, some biotite | |
| 72–75 | 7 | 5.0/5.0 | 100 | F | R4 | | | AMPHIBOLITE SCHIST and GRANODIORITE<br>CORING TERMINATED AT 75.0 ft. | |
| 76–77 | | | | | | | | | End of drilling 4/18/06 water at 37 ft |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-233**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 78 | | | | | | | | | | |
| 79 | | | | | | | | | | |
| 80 | | | | | | | | | | |
| 81 | | | | | | | | | | |
| 82 | | | | | | | | | | |
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| 84 | | | | | | | | | | |
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| 87 | | | | | | | | | | |
| 88 | | | | | | | | | | |
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| 112 | | | | | | | | | | |
| 113 | | | | | | | | | | |
| 114 | | | | | | | | | | |
| 115 | | | | | | | | | | |
| 116 | | | | | | | | | | |
| 117 | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-233**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 118 | | | | | | | | | | |
| 119 | | | | | | | | | | |
| 120 | | | | | | | | | | |
| 121 | | | | | | | | | | |
| 122 | | | | | | | | | | |
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| 152 | | | | | | | | | | |
| 153 | | | | | | | | | | |
| 154 | | | | | | | | | | |
| 155 | | | | | | | | | | |
| 156 | | | | | | | | | | |
| 157 | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-305A

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>Nuclear Island | | Total Depth<br>175 feet |
| Drilling Contractor and Rig (for Well)<br>Nichols/McCall / IR T3W | Elevation at Boring<br>423.9 feet | Ground Water Depth | Depth to Bedrock<br>57.5 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>424.9 feet | No. of Samples<br>14 | Date Started (Well)<br>5/29/06 |
| | Borehole Inclination<br>0 | Logged by<br>B. Sharp | Date Completed (Well)<br>5/29/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 2 | 15/18 | | | | | SM | SAND silty (SM); red (2.5 YR 4/6); loose; fine to medium grained; trace clay; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum | |
| 2–3 | | SPT 2 | 3 5 11 | 15/18 | | | | | | SAA; medium dense; 32% fines | | |
| 4–5 | | SPT 3 | 5 10 11 | 16/18 | | | | | | SAND silty (SM); red (2.5 YR 4/6); medium dense; trace clay; contains mica; no plasticity; 47% fines; RESIDUUM | | |
| 6–7 | | SPT 4 | 3 6 7 | 12/18 | | | | | | SAA | | |
| 9–10 | | SPT 5 | 3 5 7 | 16/18 | | | | | | SAND silty (SM); red (2.5 YR 4/8); medium dense; fine to medium grained; trace clay; very micaceous; low plasticity; 29% fines; RESIDUUM | | |
| 11–12 | | SPT 6 | 4 6 9 | 12/18 | | | | | | SAA; brown (7.5 YR 4/4); red and white | | |
| 14–15 | | SPT 7 | 3 6 8 | 15/18 | | | | | | SAA; 31% fines | | |
| 19–20 | | SPT 8 | 3 7 8 | 14/18 | | | | | | SAND silty (SM); brown (10 YR 4/3); red and white; medium dense; fine to medium grained; micaceous; 34% fines RESIDUUM | | |
| 22–23 | | | | | | | | | | SAND silty (SM); brown (10 YR 4/3); red and white; medium dense; fine to coarse grained; very micaceous; no plasticity; RESIDUUM | | |
| 24–25 | | SPT 9 | 3 6 9 | 16/18 | | | | | | | | |
| 29–30 | | SPT 10 | 4 6 8 | 14/18 | | | | | | SAA; 25% fines | | |
| 32–33 | | | | | | | | | | | Top of saprolite | |
| 34–35 | | SPT 11 | 4 6 7 | 16/18 | | | | | | | | |
| 39–40 | | SPT 12 | 3 4 8 | 15/18 | | | | | | SAA; 27% fines | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-305A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | SAND silty (SM); red (2.5 YR 4/6); loose; fine to medium grained; trace clay; low to medium plasticity; RESIDUUM *(Continued from previous page)* | | |
| 44–45 | | SPT 13 | 4 5 8 | 15/18 | | | | | | SAA, black and white | | |
| 46–48 | | | | | | | | | | | | |
| 49–50 | | SPT 14 | 3 6 8 | 16/18 | | | | | | SAA; 24% fines | | |
| 51–52 | | | | | | | | | | No recovery PARTIALLY WEATHERED ROCK BORING TERMINATED AT 57.5 ft. see rock log | | |
| 53–54 | | SPT 15 | 50/5 | 0/5 | | | | | | | | |
| 55–57 | | | | | | | | | | | | |
| 58–80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-305A

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Air Rotary / 6 inch | Nuclear Island | | 175 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Nichols/McCall / IR T3W | 423.9 feet | | 57.5 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 4 / 57.5 feet | 424.9 feet | | 5/29/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | B. Sharp | 5/29/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 58–62 | 1 | 4.7/5.0 | 58 | MW<br>SW | R1<br>R3 | | | GRANODIORITE; black and white; weathered zone from 57.5 to 60.6 ft; 35 to 45° dipping joints; some pyrite mineralization along joint surfaces<br>Fracture zone 57.5 to 60.6 ft | Tricone bit refusal at 57.5 ft on 4/28/06<br>NOTE: Samples and Lithology Information are from adjacent boring.<br>Top of sound rock |
| 63–67 | 2 | 4.0/5.0 | 74 | F | R3 to R4 | | | GRANODIORITE; black and white with xenoliths of black amphibolite schist.<br>Fracture zone 64 to 64.5 ft | |
| 68–72 | 3 | 5.0/5.0 | 100 | F | R3 to R4 | | | | |
| 73–77 | 4 | 5.0/5.0 | 100 | F | R4 | | | GRANODIORITE MIGMATITE; black and white with some scattered xenoliths of black amphibolite schist fine to coarse grained | |
| 78–82 | 5 | 5.0/5.0 | 100 | F | R4 | | | AMPHIBOLITE SCHIST; black; fine grained | 5/1/06 5:30 pm at water at 52.5 ft<br>5/2/06 7:30 am at water at 45.5 ft. |
| 83–87 | 6 | 5.0/5.0 | 96 | F | R4 | | | HORNBLENDE GNEISS; black; fine grained; some quartz dikes | End drilling on 5/2/06<br>Begin drilling 5/13/06 at 1:45 pm water at 53.5 ft |
| 88–92 | 7 | 5.0/5.0 | 100 | F | R4 | | | Some quartz dikes and zones of granodiorite with pyrite visible at 89.0 to 89.8 ft and 90.7 to 91.3 ft | |
| 93–97 | 8 | 5.0/5.0 | 100 | F | R4 | | | Granodiorite intrusion from 93.0 to 93.3 ft.; moderately fractured | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-305A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 98–101 | 9 | 4.0/4.0 | 100 | F | R4 | | | | End drilling 5/13/06 at 5:15 pm water at 28.0 ft. Begin day 5/14/06 at 7:30 am water at 50.0 ft. |
| 102–106 | 10 | 5.0/5.0 | 100 | F | R4 | | | Some granodiorite intrusions<br>Granodiorite intrusion 0.2 ft with pyrite visible | End day 5/14/06 Begin day 5/15/06 at 7:45 am water at 53.0 ft. |
| 107–111 | 11 | 5.0/5.0 | 100 | F | R4 | | | BIOTITE GNEISS MIGMATITE; black and white; fine to medium grained; some quartz dikes and small granodiorite intrusions; some small xenoliths of amphibolite schist at 30 to 60° foliation | |
| 112–116 | 12 | 5.0/5.0 | 100 | F | R4 | | | | |
| 117–121 | 13 | 5.0/5.0 | 100 | F | R4 | | | | |
| 122–126 | 14 | 5.0/5.0 | 100 | F | R4 | | | AMPHIBOLITE SCHIST; black with zones of granodiorite; black and white; quartz dikes; fine to medium grained | |
| 127–131 | 15 | 5.0/5.0 | 96 | F | R4 | | | | |
| 132–136 | 16 | 5.0/5.0 | 100 | F | R4 | | | Granodiorite zone from 134.2 to 134.6 ft<br>HORNBLENDE GNEISS; black; fine grained; some small xenoliths of black amphibolite schist | |
| 137 | | | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-305A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 138–141 | 17 | 5.0/5.0 | 88 | F | R4 | | | BIOTITE GNEISS and QUARTZ and PLAGIOCLASE GNEISS; black and white; fine to medium grained; 20 to 40° foliation; some small xenoliths of amphibolite schist. Totally healed vertical discontinuity | End day 5/15/06<br>Begin day 5/16/06 at 8:15 am<br>water at 94 ft. | |
| 142–146 | 18 | 5.0/5.0 | 96 | F | R4 | | | BIOTITE GNEISS; bluish black; fine grained; with zones of granodiorite migmatite; quartz dikes and scattered xenoliths of black amphibolite schist | | |
| 147–151 | 19 | 5.0/5.0 | 58 | F | R4 | | | GRANODIORITE; black and white; fine to medium grained with zones of fine grained; black amphibolite schist | | |
| 152–156 | 20 | 5.0/5.0 | 86 | F | R4 | | | | | |
| 157–161 | 21 | 5.0/5.0 | 100 | F | R4 | | | | | |
| 162–166 | 22 | 5.0/5.0 | 90 | F | R4 | | | | | |
| 167–171 | 23 | 5.0/5.0 | 78 | F | R4 | | | Feldspar and quartz vein visible<br>CORING TERMINATED AT 175.0 ft. | | |
| 172–174 | 24 | 3.5/3.5 | 91 | F | R4 | | | | | |
| 175–177 | | | | | | | | | Boring terminated on 5/16/06 | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-305B

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: Nuclear Island | Total Depth: 175 feet |
| Drilling Contractor and Rig (for Well): Nichols/McCall / IR T3W | Elevation at Boring: 423.9 feet / Ground Water Depth | Depth to Bedrock: 57.5 feet |
| Sampling Method (Boring): Split Spoon | Elevation at Well: 423.7 feet / No. of Samples: 14 | Date Started (Well): 5/26/06 |
| | Borehole Inclination: 0 / Logged by: B. Sharp | Date Completed (Well): 5/26/06 |

Reviewed by / Date: M. Cooke 6/11/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 2 | 15/18 | | | | | SM | SAND silty (SM); red (2.5 YR 4/6); loose; fine to medium grained; trace clay; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum | |
| 2–3 | | SPT 2 | 3 5 11 | 15/18 | | | | | | SAA; medium dense; 32% fines | | |
| 4–5 | | SPT 3 | 5 10 11 | 16/18 | | | | | | SAND silty (SM); red (2.5 YR 4/6); medium dense; trace clay; contains mica; no plasticity; 47% fines; RESIDUUM | | |
| 6–7 | | SPT 4 | 3 6 7 | 12/18 | | | | | | SAA | | |
| 9–10 | | SPT 5 | 3 5 7 | 16/18 | | | | | | SAND silty (SM); red (2.5 YR 4/8); medium dense; fine to medium grained; trace clay; very micaceous; low plasticity; 29% fines; RESIDUUM | | |
| 11–12 | | SPT 6 | 4 6 9 | 12/18 | | | | | | SAA; brown (7.5 YR 4/4); red and white | | |
| 14–15 | | SPT 7 | 3 6 8 | 15/18 | | | | | | SAA; 31% fines | | |
| 19–20 | | SPT 8 | 3 7 8 | 14/18 | | | | | | SAND silty (SM); brown (10 YR 4/3); red and white; medium dense; fine to medium grained; micaceous; 34% fines RESIDUUM | | |
| 22–23 | | | | | | | | | | SAND silty (SM); brown (10 YR 4/3); red and white; medium dense; fine to coarse grained; very micaceous; no plasticity; RESIDUUM | | |
| 24–25 | | SPT 9 | 3 6 9 | 16/18 | | | | | | | | |
| 29–30 | | SPT 10 | 4 6 8 | 14/18 | | | | | | SAA; 25% fines | | |
| 32–33 | | | | | | | | | | | Top of saprolite | |
| 34–35 | | SPT 11 | 4 6 7 | 16/18 | | | | | | | | |
| 39–40 | | SPT 12 | 3 4 8 | 15/18 | | | | | | SAA; 27% fines | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-305B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | SAND silty (SM); red (2.5 YR 4/6); loose; fine to medium grained; trace clay; low to medium plasticity; RESIDUUM *(Continued from previous page)* | | |
| 44–45 | | SPT 13 | 4 5 8 | 15/18 | | | | | | SAA, black and white | | |
| 46–48 | | | | | | | | | | | | |
| 49–50 | | SPT 14 | 3 6 8 | 16/18 | | | | | | SAA; 24% fines | | |
| 51–53 | | | | | | | | | | No recovery<br>PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 57.5 ft. see rock log | | |
| 54–55 | | SPT 15 | 50/5 | 0/5 | | | | | | | | |
| 56–80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-305B

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Air Rotary / 6 inch | Boring Location<br>Nuclear Island | | Total Depth<br>175 feet |
| Drilling Contractor and Rig<br>Nichols/McCall / IR T3W | Elevation at Boring<br>423.9 feet | Ground Water Depth | Depth to Bedrock<br>57.5 feet |
| Casing Size and Depth (Boring)<br>4 / 57.5 feet | Elevation at Well<br>423.7 feet | No. of Core Boxes | Date Started<br>5/26/06 |
| | Borehole Inclination<br>0 | Logged by<br>B. Sharp | Date Completed<br>5/26/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 58–62 | 1 | 4.7/5.0 | 58 | MW<br>SW | R1<br>R3 | | | GRANODIORITE; black and white; weathered zone from 57.5 to 60.6 ft; 35 to 45° dipping joints; some pyrite mineralization along joint surfaces<br>Fracture zone 57.5 to 60.6 ft | Tricone bit refusal at 57.5 ft on 4/28/06<br>NOTE: Samples and Lithology Information are from adjacent boring.<br>Top of sound rock |
| 63–67 | 2 | 4.0/5.0 | 74 | F | R3 to R4 | | | GRANODIORITE; black and white with xenoliths of black amphibolite schist.<br>Fracture zone 64 to 64.5 ft | |
| 68–72 | 3 | 5.0/5.0 | 100 | F | R3 to R4 | | | | |
| 73–77 | 4 | 5.0/5.0 | 100 | F | R4 | | | GRANODIORITE MIGMATITE; black and white with some scattered xenoliths of black amphibolite schist fine to coarse grained | |
| 78–82 | 5 | 5.0/5.0 | 100 | F | R4 | | | AMPHIBOLITE SCHIST; black; fine grained | 5/1/06 5:30 pm at water at 52.5 ft<br>5/2/06 7:30 am at water at 45.5 ft. |
| 83–87 | 6 | 5.0/5.0 | 96 | F | R4 | | | HORNBLENDE GNEISS; black; fine grained; some quartz dikes | End drilling on 5/2/06<br>Begin drilling 5/13/06 at 1:45 pm water at 53.5 ft |
| 88–92 | 7 | 5.0/5.0 | 100 | F | R4 | | | Some quartz dikes and zones of granodiorite with pyrite visible at 89.0 to 89.8 ft and 90.7 to 91.3 ft | |
| 93–97 | 8 | 5.0/5.0 | 100 | F | R4 | | | Granodiorite intrusion from 93.0 to 93.3 ft.; moderately fractured | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-305B**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 98–101 | 9 | 4.0/4.0 | 100 | F | R4 | | | | End drilling 5/13/06 at 5:15 pm water at 28.0 ft. Begin day 5/14/06 at 7:30 am water at 50.0 ft. | |
| 102–106 | 10 | 5.0/5.0 | 100 | F | R4 | | | Some granodiorite intrusions<br>Granodiorite intrusion 0.2 ft with pyrite visible | End day 5/14/06 Begin day 5/15/06 at 7:45 am water at 53.0 ft. | |
| 107–111 | 11 | 5.0/5.0 | 100 | F | R4 | | | BIOTITE GNEISS MIGMATITE; black and white; fine to medium grained; some quartz dikes and small granodiorite intrusions; some small xenoliths of amphibolite schist at 30 to 60° foliation | | |
| 112–116 | 12 | 5.0/5.0 | 100 | F | R4 | | | | | |
| 117–121 | 13 | 5.0/5.0 | 100 | F | R4 | | | | | |
| 122–126 | 14 | 5.0/5.0 | 100 | F | R4 | | | AMPHIBOLITE SCHIST; black with zones of granodiorite; black and white; quartz dikes; fine to medium grained | | |
| 127–131 | 15 | 5.0/5.0 | 96 | F | R4 | | | | | |
| 132–136 | 16 | 5.0/5.0 | 100 | F | R4 | | | Granodiorite zone from 134.2 to 134.6 ft<br>HORNBLENDE GNEISS; black; fine grained; some small xenoliths of black amphibolite schist | | |
| 137 | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-305B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 138 | | | | | | | | | | |
| 139 | 17 | 5.0/5.0 | 88 | F | R4 | | | BIOTITE GNEISS and QUARTZ and PLAGIOCLASE GNEISS; black and white; fine to medium grained; 20 to 40° foliation; some small xenoliths of amphibolite schist. Totally healed vertical discontinuity | End day 5/15/06<br>Begin day 5/16/06 at 8:15 am<br>water at 94 ft. | |
| 140 | | | | | | | | | | |
| 141 | | | | | | | | | | |
| 142 | | | | | | | | | | |
| 143 | | | | | | | | BIOTITE GNEISS; bluish black; fine grained; with zones of granodiorite migmatite; quartz dikes and scattered xenoliths of black amphibolite schist | | |
| 144 | 18 | 5.0/5.0 | 96 | F | R4 | | | | | |
| 145 | | | | | | | | | | |
| 146 | | | | | | | | | | |
| 147 | | | | | | | | | | |
| 148 | | | | | | | | GRANODIORITE; black and white; fine to medium grained with zones of fine grained; black amphibolite schist | | |
| 149 | 19 | 5.0/5.0 | 58 | F | R4 | | | | | |
| 150 | | | | | | | | | | |
| 151 | | | | | | | | | | |
| 152 | | | | | | | | | | |
| 153 | | | | | | | | | | |
| 154 | 20 | 5.0/5.0 | 86 | F | R4 | | | | | |
| 155 | | | | | | | | | | |
| 156 | | | | | | | | | | |
| 157 | | | | | | | | | | |
| 158 | | | | | | | | | | |
| 159 | 21 | 5.0/5.0 | 100 | F | R4 | | | | | |
| 160 | | | | | | | | | | |
| 161 | | | | | | | | | | |
| 162 | | | | | | | | | | |
| 163 | | | | | | | | | | |
| 164 | 22 | 5.0/5.0 | 90 | F | R4 | | | | | |
| 165 | | | | | | | | | | |
| 166 | | | | | | | | | | |
| 167 | | | | | | | | Feldspar and quartz vein visible<br>CORING TERMINATED AT 175.0 ft. | | |
| 168 | | | | | | | | | | |
| 169 | 23 | 5.0/5.0 | 78 | F | R4 | | | | | |
| 170 | | | | | | | | | | |
| 171 | | | | | | | | | | |
| 172 | | | | | | | | | | |
| 173 | 24 | 3.5/3.5 | 91 | F | R4 | | | | | |
| 174 | | | | | | | | | | |
| 175 | | | | | | | | | Boring terminated on 5/16/06 | |
| 176 | | | | | | | | | | |
| 177 | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-312

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Hollow Stem Auger / 6.25 inch | Boring Location: Adjacent to Power Block | Total Depth: 115 feet |
| Drilling Contractor and Rig (for Well): Poole/Gregg / Rhino | Elevation at Boring: 425.2 feet / Ground Water Depth | Depth to Bedrock: 35 feet |
| Sampling Method (Boring): Split Spoon | Elevation at Well: 425.1 feet / No. of Samples: 11 | Date Started (Well): 5/12/06 |
| | Borehole Inclination: 0 / Logged by: B. Sharp | Date Completed (Well): 5/12/06 |

Reviewed by / Date: M. Cooke 6/11/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–5 | | SPT 1 | 1 3 4 | 13/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 4/6); damp; medium stiff; fine sand ~40%; low plasticity; micaceous; RESIDUUM<br>SAA, except stiff | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 3 4 7 | 11/18 | | | | | | | |
| 4–5 | | SPT 3 | 2 3 5 | 16/18 | | | | | | **SILT** sandy (ML); red (2.5 YR 4/6); moist; medium stiff; fine sand ~30%; low plasticity; micaceous; RESIDUUM | |
| 6–7 | | SPT 4 | 4 5 7 | 14/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 4/8); moist; stiff; fine sand ~15% low plasticity; micaceous; RESIDUUM | |
| 8–12 | | SPT 5, SPT 6 | 3 4 5; 3 4 7 | 16/18; 16/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 4/6); moist; stiff; fine sand ~35% low plasticity; micaceous; RESIDUUM | |
| 13–15 | | SPT 7 | 3 4 6 | 14/18 | | | | | ML | **SILT** sandy (ML) reddish brown (2.5 YR 4/4); moist; stiff; fine sand ~30%; low plasticity; micaceous; RESIDUUM | |
| 17–20 | | SPT 8 | 5 6 8 | 14/18 | | | | | ML | **SILT** sandy (ML); brown (7.5 YR 4/4); moist; stiff; fine sand ~15%; low plasticity; micaceous; SAPROLITE | Top of saprolite |
| 23–25 | | SPT 9 | 5 6 9 | 16/18 | | | | | ML | **SILT** sandy (ML); brown and red (7.5 YR 4/4 and 2.5 YR 4/6); moist; very stiff; fine sand ~5% low plasticity; micaceous; SAPROLITE | |
| 29–30 | | SPT 10 | 5 7 8 | 14/18 | | | | | | | |
| 32–35 | | SPT 11 | 50/6 | 6/6 | | | | | ML | **SILT** sandy (ML); strong brown (7.5 YR 4/6); moist; hard; fine sand ~20%; low plasticity; micaceous; small rock fragments; PARTIALLY WEATHERED ROCK<br>REFUSAL, see rock log | Partially weathered rock |

WELL

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-312

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Hollow Stem Auger / 6.25 inch | Boring Location<br>Adjacent to Power Block | | Total Depth<br>115 feet |
| Drilling Contractor and Rig<br>Poole/Gregg / Rhino | Elevation at Boring<br>425.2 feet | Ground Water Depth | Depth to Bedrock<br>35 feet |
| Casing Size and Depth (Boring)<br>3.25 / 35 feet | Elevation at Well<br>425.1 feet | No. of Core Boxes<br>6 | Date Started<br>5/12/06 |
| | Borehole Inclination<br>0 | Logged by<br>B. Sharp | Date Completed<br>5/12/06 |

Reviewed by / Date M. Cooke 6/11/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 35–40 | 1 | 0.1 / 5.0 | 2 | CW to HW | R0 | | | Weathered zone; little recovery<br>Dike at 35.0 ft of granite pegmatite | Refusal at 35.0 ft, switch to HQ coring<br>water level at 7 ft.<br>End of 4/25/06<br>Beginning of 4/26/06<br>NOTE: Samples and Lithology Information are from adjacent boring. | |
| 40–45 | 2 | 4.3 / 5.0 | 54 | SW | R3<br>R4 | | | MIGMATITE gneiss with schist, granodiorite and quartz diorite; gray to very dark gray (Gley 1 6/6, Gley 1 3/6); flow band texture<br>40 to 41.7 ft slightly weathered granodiorite schist dike at 4 ft. | Cave in depth at 26 ft.<br>Top of moderately weathered rock at 40 ft.<br>Top of sound rock at 41.7 ft. | |
| 45–50 | 3 | 5.0 / 5.0 | 100 | F | R4 | | | | | |
| 50–54 | 4 | 4.0 / 4.0 | 100 | F | R4 | | | MIGMATITE with zones of schist, granodiorite, and biotite gneiss; gray to very dark gray and greenish gray (Gley 1 6/6 and Gley 1 3/6, Gley 1 5/10 GY); flow band texture from 50 to 52.5 ft. | End of drilling 4/26/06 water level at 10 ft<br>Begin day 4/27/06, water level at 44 ft. | |
| 54–55 | 5 | 1.0 / 1.0 | 100 | F | R4 | | | BIOTITE GNEISS ZONE; light gray to very dark gray (Gley 1 6/6 and Gley 1 3/6); foliation 20° gneiss texture | | |
| 55–60 | 6 | 5.0 / 5.0 | 98 | F | R4 | | | MIGMATITE; light gray to dark gray (Gley 1 7/4 and 4/N) | | |
| 60–65 | 7 | 4.8 / 4.8 | 96 | F | R4 to R5 | | | BIOTITE GNEISS with bands of schist; light gray to dark gray (Gley 1 7/4 and Gley 1 4/N); foliation at 30° | | |
| 65–70 | 8 | 5.0 / 5.0 | 92 | F | R4 to R5 | | | BIOTITE GNEISS and schists xenoliths; gray and very dark gray (Gley 1 6/N, 3/N); gneiss texture; some foliation at 64.8 to 65.4 ft 25° | | |
| 70–75 | 9 | 5.0 / 5.0 | 100 | F | R4 to R5 | | | AMPHIBOLITE SCHIST (69.8 to 72.6 ft) and BIOTITE GNEISS (72.6 to 74.8 ft); gray to very dark gray (Gley 1 6/N, 3/N). Foliation at 30°; bands or quartz from 69.8 to 71.8 ft. breccia texture at 72.5 ft, quartz biotite | | |

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-312**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 75–79 | 10 | 5.0/5.0 | 100 | F | R4 to R5 | | | BIOTITE GNEISS; with bands of schist; gray to dark gray (Gley 1 3/N, 6/N); pegmatite texture (79.3 to 79.8 ft); gneiss texture with foliation of 45°; biotite; quartz; chalcopyrite; feldspar. | End of 4/27/06, water level at 12 ft<br>Begin day 4/29/06, water level at 37.5 ft. | |
| 80–84 | 11 | 5.0/5.0 | 86 | F | R4 | | | MIGMATITE; mixture of AMPHIBOLITE SCHIST; black and white (Gley 1 8/N and 2.5/N); white zones of coarse granodiorite black and white; coarse grain; quartz, biotite | End of 4/29/06, water level at 37.5 ft.<br>Begin day 4/30/06, water level at 52 ft. | |
| 85–89 | 12 | 5.0/5.0 | 100 | F | R4 | | | SAA; fine to medium; zones of breccia texture | | |
| 90–94 | 13 | 5.0/5.0 | 96 | F | R4 to R5 | | | MIGMATITE; mixture of GRANODIORITE and BIOTITE GNEISS and SCHIST; black, white, light gray (Gley 1 8/N and 2.5/N, 7/N)); irregular flow banding; quartz, biotite | | |
| 95–99 | 14 | 5.0/5.0 | 100 | F | R4 to R5 | | | | | |
| 100–104 | 15 | 5.0/5.0 | 100 | F | R4 to R5 | | | MIGMATITE; mixture of GRANODIORITE and SCHIST; black, white, light gray (Gley 1 8/N and 2.5/N, 7/N)\); igneous texture | End of day 4/30/06<br>Begin of day 5/1/06, water level at 54 ft. | |
| 105–109 | 16 | 5.0/5.0 | 100 | F | R4 to R5 | | | | | |
| 110–115 | 17 | 5.2/5.2 | 100 | F | R4 to R5 | | | Quartz dike | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG ROCK - WELL No. OW-312**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 115 | | | | | | | | CORING TERMINATED AT 115.0 ft. | Coring terminated on 5/1/06 at 115.0 ft. | |
| 116 | | | | | | | | | | |
| 117 | | | | | | | | | | |
| 118 | | | | | | | | | | |
| 119 | | | | | | | | | | |
| 120 | | | | | | | | | | |
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| 124 | | | | | | | | | | |
| 125 | | | | | | | | | | |
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| 150 | | | | | | | | | | |
| 151 | | | | | | | | | | |
| 152 | | | | | | | | | | |
| 153 | | | | | | | | | | |
| 154 | | | | | | | | | | |
| 155 | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-313

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Hollow Stem Auger / 6.25 inch | Boring Location<br>Adjacent to Power Block | | Total Depth<br>150 feet |
| Drilling Contractor and Rig (for Well)<br>Poole/Gregg / Rhino | Elevation at Boring<br>420.5 feet | Ground Water Depth | Depth to Bedrock<br>61 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>420.9 feet | No. of Samples<br>16 | Date Started (Well)<br>5/13/06 |
| | Borehole Inclination<br>0 | Logged by<br>B. Sharp | Date Completed (Well)<br>5/13/06 |

Reviewed by / Date M. Cooke 5/22/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–3 | | SPT 1 | 8 5 3 | 10/18 | | | | | ML | **SILT** sandy (ML); yellowish red (5 YR 4/6); damp; medium stiff; 60% silt, 40% clay; no plasticity; very micaceous; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| | | SPT 2 | 3 3 5 | 12/18 | | | | | | | |
| 3–22 | | SPT 3 | 2 3 4 | 16/18 | | | | | SM | **SAND** silty (SM); strong brown (7.5 YR 5/6); loose, 60% sand, 40% silt, non plastic to low plasticity, micaceous; RESIDUUM | |
| | | SPT 4 | 2 4 5 | 13/18 | | | | | | | |
| | | SPT 5 | 2 4 5 | 14/18 | | | | | | | |
| | | SPT 6 | 2 4 6 | 14/18 | | | | | | SAA dark yellowish brown (10 YR 4/4); mottled with black and white | |
| | | SPT 7 | 3 3 5 | 14/18 | | | | | | **SAND** silty (SM); strong brown (7.5 YR 5/6) | |
| | | SPT 8 | 3 5 5 | 15/18 | | | | | | | |
| 22–40 | | SPT 9 | 3 5 6 | 15/18 | | | | | SM | **SAND** silty (SM); brown (10 YR 4/3); mottled with white and red; medium dense; non-plastic; micaceous; RESIDUUM to SAPROLITE | First saprolitic sample |
| | | SPT 10 | 4 6 8 | 17/18 | | | | | | SAA, mottled with black, white and yellowish red.<br>SAA; mottled with black, white, and reddish brown | |
| | | SPT 11 | 4 6 7 | 16/18 | | | | | | | |
| | | SPT 12 | 4 7 9 | 16/18 | | | | | | | |

WELL

Project Name : Job Number

MACTEC

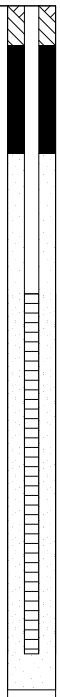
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-313

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | **SAND** silty (SM); brown (10 YR 4/3); mottled with white and red; medium dense; non-plastic; micaceous; RESIDUUM to SAPROLITE *(Continued from previous page)* | |
| 44–45 | | SPT 13 | 5 7 9 | 15/18 | | | | | | | |
| 46–48 | | | | | | | | | SM | **SAND** silty (SM); very dark grayish brown (3/2); very dense; contains rock fragments and mica; PARTIALLY WEATHERED ROCK | |
| 49–50 | | SPT 14 | 50/2 | 3/2 | | | | | | | |
| 51–53 | | | | | | | | | SM | **SAND** silty (SM); brown (10 YR 4/3); mottled with black, white, and yellowish brown; dense; fine to coarse with angular gravel, non-plastic; micaceous; SAPROLITE | |
| 54–55 | | SPT 15 | 11 13 18 | 16/18 | | | | | | | |
| 56–58 | | | | | | | | | | | |
| 59–60 | | SPT 16 | 6 13 50/3.5 | 15/15.5 | | | | | | **SAND** silty (SM); brown (10 YR 4/3); mottled with black, white, and yellowish brown; dense; fine to coarse with angular gravel, non-plastic; micaceous; PARTIALLY WEATHERED ROCK BORING TERMINATED AT 61.0 ft. | Partially weathered rock |
| 61–62 | | SPT 17 | 50/.25 | 0/0.25 | | | | | | | |
| 63–80 | | | | | | | | | | | |

WELL



Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-327

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | Total Depth<br>66 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>410.8 feet / Ground Water Depth | Depth to Bedrock<br>49.3 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>410.7 feet / No. of Samples<br>14 | Date Started (Well)<br>5/29/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/29/06 |

Reviewed by / Date M. Cooke 6/12/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 4 5 8 | 18/18 | | | | | CL | **CLAY** sandy (CL); red (10 R 4/6); with tan/gray mottling; damp; medium stiff; 50 to 60% clay, 40 to 50% fine grained sand and silt; low plasticity; gradational contact below; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 4 6 8 | 10/18 | | | | | SM | **SAND** silty,clayey (SM); red (10 R 4/6); mottled; moist; medium dense; 50 to 60% fine grained sand; 40 to 50% silt; some clay; RESIDUUM | Slow drilling<br>Losing water |
| 4–5 | | SPT 3 | 3 4 6 | 18/18 | | | | | | SAND silty (SM); red (2.5 YR 4/8); loose;70 to 80% fine grained sand; 20 to 30% silt; trace clay; micaceous RESIDUUM | |
| 6–7 | | SPT 4 | 4 4 6 | 15/18 | | | | | | SAA; but less silt 10 to 20% | |
| 8–9 | | SPT 5 | 4 4 7 | 17/18 | | | | | | SAA; yellowish red (5 YR 5/8); medium dense; grading downward to red (2.5 YR 4/8) below 9.5 ft. localized clay-rich (white kaolinite) zone from 8.5 to 8.6 ft | |
| 10–11 | | SPT 6 | 3 3 4 | 17/18 | | | | | SM | SAND silty (SM); loose; faint structure sub horizontal yellowish brown and black thin (1/16 to 1/8 inch thick) banding; SAPROLITE | |
| 12–13 | | SPT 7 | 4 5 7 | 18/18 | | | | | | SAA; red (10 R 4/6); medium dense; no structure; localized micaceous zones | End of day 4/14/06 water level at 7.6 ft.<br>Begin day 4/17/06 water level dry |
| 14–15 | | SPT 8 | 3 3 5 | 18/18 | | | | | | **SAND** silty (SM); red (10 R 4/6) with localized zones of strong brown (7.5 YR 5/8); moist; loose; 80 to 90% fine grained sand, 10 to 20% silt; SAPROLITE | |
| 16–17 | | SPT 9 | 5 10 16 | 18/18 | | | | | SP-SM | **SAND** slightly silty (SP-SM); strong brown (7.5 YR 5/8); to yellowish brown (10 YR 5/8); below 24.7 ft; moist; medium dense; 90% fine grained sand, 10% silt, trace silt below 24.7 ft.; SAPROLITE | |
| 18–19 | | SPT 10 | 10 6 7 | 17/18 | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/8); and (2.5 YR 4/8); medium dense; some black manganese staining, 80% fine grained sand, 20% silt; SAPROLITE | |
| 20–21 | | SPT 11 | 5 7 10 | 18/18 | | | | | | SAA; dark red (2.5 YR 3/6); with alternating zones of yellowish brown (10 YR 5/8); moist; medium dense; some black manganese staining; 80% fine grained sand, 20% silt; SAPROLITE | Drilling becomes very hard<br>Easier drilling from 37.5 to 38.5 ft |
| 22–23 | | SPT 12 | 8 14 15 | 18/18 | | | | | | **SAND** silty (SM) olive brown (2.5 Y 4/4); and light olive brown (2.5 Y 5/6); moist; medium | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-327

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | dense; with thin stringers (up to 1/8 inch thick) of black manganese staining; micaceous; SAPROLITE | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 9 10 12 | 18/18 | | | | | | **SAND** silty (SM); yellowish brown (10 YR 5/8); and (2.5 YR 4/8); medium dense; some black manganese staining, 80% fine grained sand, 20% silt; SAPROLITE | | |
| 45 | | | | | | | | | | *(Continued from previous page)* SAA; yellowish brown (10 YR 5/8); to dark reddish brown below 44.8 ft; some light gray/white (5 YR 7/1), 80% fine grained sand, 20 % silt; micaceous | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 46 50/3 | 9/9 | | | | | | AMPHIBOLITE; black (10 YR 2/1); highly weathered; rock fragments up to 5 cm in diameter; PARTIALLY WEATHERED ROCK BORING TERMINATED AT 49.3 ft., see rock log | Tricone casing advancement tool plugging up from 47.5 to 48.5 ft. NOTE: Samples and Lithology Information are from adjacent boring. End of day 4/17/06 water level at 41.7 ft. Begin day 4/18/06 | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

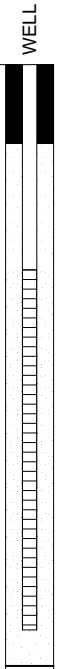
# WELL LOG ROCK - WELL No. OW-327

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | | Total Depth<br>66 feet |
| Drilling Contractor and Rig<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>410.8 feet | Ground Water Depth | Depth to Bedrock<br>49.3 feet |
| Casing Size and Depth (Boring)<br>3.5 / 49.3 feet | Elevation at Well<br>410.7 feet | No. of Core Boxes | Date Started<br>5/29/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce | Date Completed<br>5/29/06 |

Reviewed by / Date M. Cooke 6/12/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 50–54 | 1 | 0.0 / 5.0 | 0 | HW, CW | R3, R0 | | | AMPHIBOLITE SCHIST; dark gray/black (5 Y 2.5/1); fine to medium grained; foliation not obvious; highly weathered; washed away in drill cuttings; SAPROLITE/PARTIALLY WEATHERED ROCK | | |
| 55–59 | 2 | 1.9 / 5.0 | 24 | HW, MW, SW | R3, R4 | | | QUARTZ, BIOTITE, HORNBLENDE, and PLAGIOCLASE GNEISS; dark gray/black and white 54.3 to 54.8 ft with heavy brown oxidation staining; foliation dipping 60 to 70°<br><br>CORING TERMINATED AT 59.3 ft. | | |
| 60–66 | | | | | | | | | Borehole terminated on 4/18/06 at 59.3 ft. water at 45.3 ft | |



See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-333

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | Total Depth<br>85 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>394.4 feet / Ground Water Depth | Depth to Bedrock<br>26.1 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>394.5 feet / No. of Samples<br>19 | Date Started (Well)<br>5/28/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/28/06 |

Reviewed by / Date M. Cooke 6/12/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 2 3 | 9/18 | | | | | SM | **SAND** silty (SM); brown (2.5 YR 3/3); dry; loose | NOTE: Samples and Lithology Information are from adjacent boring. Residuum | |
| 2–3 | | SPT 2 | 5 9 10 | 14/18 | | | | | | **SAND** silty (SM); red (10 R 3/4); dry; medium dense | | |
| 4–5 | | SPT 3 | 5 9 14 | 14/18 | | | | | | **SAND** sitly (SM); dark red (2.5 YR 3/6); dry; medium dense; trace mica | | |
| 6–7 | | SPT 4 | 7 10 15 | 15/18 | | | | | | **SAND** silty (SM); dark red (2.5 YR 4/6); dry; medium dense; micaceous | | |
| 9–10 | | SPT 5 | 5 7 11 | 15/18 | | | | | | SAA | | |
| 12 | | SPT 6 | 3 5 6 | 14/18 | | | | | SM | **SAND** silty (SM); orange (5 YR 5/8); damp; medium dense; micaceous; fine to medium grained; SAPROLITE | Saprolite | |
| 14–15 | | SPT 7 | 3 3 5 | 18 | | | | | | SAA; pink orange (7.5 YR 7/6); damp; loose; 15% mica; SAPROLITE | | |
| 19–20 | | SPT 8 | 2 3 5 | 12/18 | | | | | SM | SAA; white to brown; (7.5 YR 8/1 and 7.5 YR 5/4); damp; loose; 30% mica; SAPROLITE | | |
| 23–24 | | SPT 9 | 16 50/0.2 | 6/6.2 | | | | | | **SAND** silty; (SM); brown (5 YR 5/4); damp; very dense; fine gravel; micaceous; rock fragments; PARTIALLY WEATHERED ROCK<br>Tricone refusal 25.9 ft, advanced casing to 26.1 ft, see rock log | Difficult drilling | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-333

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Air Rotary / 6 inch | Boring Location<br>Adjacent to Power Block | | Total Depth<br>85 feet |
| Drilling Contractor and Rig<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>394.4 feet | Ground Water Depth | Depth to Bedrock<br>26.1 feet |
| Casing Size and Depth (Boring)<br>3.5 / 26.1 feet | Elevation at Well<br>394.5 feet | No. of Core Boxes<br>3 | Date Started<br>5/28/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce | Date Completed<br>5/28/06 |

Reviewed by / Date M. Cooke 6/12/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 27–30 | 1 | 3.8/3.9 | 100 | F | R3 | | | GRANODIORITE; biotite; quartz and orthoclase | NOTE: Samples and Lithology Information are from adjacent boring. |
| 30–36 | 2 | 5.8/10.0 | 47.5 | F; MW | R3; R2 | | | GRANODIORITE; biotite; quartz and orthoclase | |
| 36–40 | | | | CW | R0 | | | No recovery; PARTIALLY WEATHERED ROCK | |
| 40–45 | 3 | 3.5/5.0 | 0 | HW | R0 | | | Highly weathered igneous texture, coarse grain size 4 mm and more, >10% mafics ~20% diorite | |
| 45–48 | 4 | 4.4/5.0 | 40 | CW; HW | R1 | | | Highly weathered igneous texture, coarse grain size 4 mm and more, >10% mafics ~20% diorite | |
| 48–50 | | | | SW | R3 | | | GRANODIORITE; biotite; coarse grained quartz and orthoclase | Bottom of highly weathered |
| 50–55 | 5 | 4.5/5.0 | 70 | SW; CW to HW; MW; SW | R2 to R3; R0 to R1; R2; R3 | | | GRANODIORITE; biotite; coarse grained quartz and orthoclase | End of day 4/18/06<br>Begin day 4/19/06 |
| 55–60 | 6 | 5.0/5.0 | 100 | SW to F; HW | R3; R1 | | | GRANODIORITE; biotite; coarse grained quartz and orthoclase | |
| 60–66 | 7 | 4.4/5.0 | 17 | SW to F; CW to HW | R3; R0 to R1 | | | GRANODIORITE; biotite; coarse grained quartz and orthoclase | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-333

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 67–70 | 8 | 4.8 / 5.0 | 72.5 | HW to MW; CW; SW | R2; R0; R2 to R3 | | | | | |
| 70–75 | 9 | 3.7 / 5.0 | 65 | HW; SW to F | R1; R3 | | | | | |
| 75–85 | 10 | 10.0 / 10.0 | 99 | SW to F | R3 | | | 1 inch dike 40° aplite<br>1 inch dike 40° aplite<br>1 inch dike 40° aplite | Discolored discontinuity | |
| 85–106 | | | | | | | | CORING TERMINATED AT 86.0 ft | Bottom of core at 85 ft on 4/19/06 | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-401A

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: Cooling Tower | Total Depth: 120 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Fraste Multidrill XL | Elevation at Boring: 404 feet / Ground Water Depth | Depth to Bedrock: 64 feet |
| Sampling Method (Boring): Standard | Elevation at Well: 404.1 feet / No. of Samples: 17 | Date Started (Well): 5/15/06 |
| | Borehole Inclination: 0 / Logged by: C. Bruce | Date Completed (Well): 5/17/06 |

Reviewed by / Date: M. Cooke 5/22/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 4 5 7 | 18/18 | | | | | ML | **SILT** sandy (ML); moderate reddish brown (10 R 4/6); damp; stiff; fine sand ~30%; low plasticity; FILL | NOTE: Samples and Lithology Information are from adjacent boring. Fill | |
| 2–3 | | SPT 2 | 8 11 12 | 13/18 | | | | | ML | **SILT** sandy (ML); moderate reddish brown (10 YR 4/6); moist; very stiff; fine sand ~ 40%; low plasticity; RESIDUUM | Residuum | |
| 4–5 | | SPT 3 | 2 18 10 | 18/18 | | | | | | **SILT** sandy (ML); moderate red (5 R 4/6); moist; very stiff; fine sand ~10%; low plasticity; slightly micaceous; RESIDUUM | | |
| 6–7 | | SPT 4 | 4 5 6 | 13/18 | | | | | | **SILT** sandy (ML); moderate reddish brown (10 R 4/6); moist; stiff; fine sand ~ 40%; low plasticity; slightly micaceous; RESIDUUM | | |
| 8–9 | | SPT 5 | 7 4 6 | 14/18 | | | | | ML | **SILT** sandy (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~40%; low plasticity; slightly micaceous; SAPROLITE | Saprolite | |
| 11–12 | | SPT 6 | 6 6 6 | 18/18 | | | | | | **SILT** (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~5%; low plasticity; micaceous; banded; SAPROLITE | | |
| 14–15 | | SPT 7 | 2 3 6 | 14/18 | | | | | | SAA | | |
| 19–20 | | SPT 8 | 4 4 8 | 15/18 | | | | | | SAA | | |
| 24–25 | | SPT 9 | 4 5 9 | 18/18 | | | | | | SAA; ~10% fine sand | | |
| 27–28 | | SPT 9A | 4 6 8 | 16/18 | | | | | | SILT (ML); moderate reddish brown (10 R 4/6); moist; stiff; fine sand ~5%; low plasticity; micaceous; SAPROLITE | Hard drilling, check for rock at 26.5 ft | |
| 29–30 | | SPT 10 | 4 5 6 | 18/18 | | | | | | **SILT** sandy (ML); pale reddish brown (10 R 5/4); moist; stiff; fine sand ~10%; low plasticity; micaceous; SAPROLITE | End of day 4/17/06<br>Begin day 4/18/06. No water to 28 ft | |
| 34–35 | | SPT 11 | 6 8 13 | 18/18 | | | | | | **SILT** sandy (ML); dark yellowish orange (10 YR 6/6); moist; very stiff; fine sand ~30%; low plasticity; micaceous; SAPROLITE | | |
| 39–40 | | SPT 12 | 6 8 13 | 15/18 | | | | | | SAA | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-401A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | **SILT** sandy (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~40%; low plasticity; slightly micaceous; SAPROLITE *(Continued from previous page)* | | |
| 44–45 | | SPT 13 | 8 10 12 | 18 | | | | | | SAA | | |
| 46–48 | | | | | | | | | | | | |
| 49–50 | | SPT 14 | 6 11 15 | 14/18 | | | | | | SAA | | |
| 51–53 | | | | | | | | | SM | **SAND** silty (SM); medium light gray (N 6 6/0); moist; medium dense; fine sand ~60%; SAPROLITE | | |
| 54–55 | | SPT 15 | 12 14 14 | 14/18 | | | | | | | | |
| 56–58 | | | | | | | | | ML | **SILT** sandy (ML); greenish black (N 2); moist; hard; fine sand ~30%; low plasticity; small quartz fragments; micaceous; SAPROLITE | | |
| 59–60 | | SPT 16 | 17 27 50 | 18/18 | | | | | | | | |
| 61–63 | | | | | | | | | ML | **SILT** sandy (ML); dark yellowish orange (10 YR 6/8); moist; hard; fine sand ~40%; low plasticity; small quartz fragments; PARTIALLY WEATHERED ROCK | Partially weathered rock | |
| 64 | | SPT 17 | 50/6 | 6/6 | | | | | | BORING TERMINATED AT 64.0 ft. see rock log | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-401A

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Air Rotary / 6 inch | Boring Location<br>Cooling Tower | | Total Depth<br>120 feet |
| Drilling Contractor and Rig<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>404 feet | Ground Water Depth | Depth to Bedrock<br>64 feet |
| Casing Size and Depth (Boring)<br>3.5 / 64 feet | Elevation at Well<br>404.1 feet | No. of Core Boxes<br>4 | Date Started<br>5/15/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce | Date Completed<br>5/17/06 |

Reviewed by / Date M. Cooke 5/22/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 64–69 | 1 | 1.1/5.0 | 16 | RS, SW, F | R0 | | | AMPHIBOLITE SCHIST with GRANODIORITE; very dark gray and white (10 YR 2/1); and (Gley 1 8 /1); intrusion 30% foliated | Switched to coring.<br>NQ sampler used (Triple tube samples)<br>NOTE: Samples and Lithology Information are from adjacent boring. |
| 69–72 | 2 | 4.5/5.0 | 76 | SW, F | R4 | | | GRANODIORITE; with amphibolite dikes and intrusions | |
| 72–74 | | | | HW | R2 | | | MIGMATITE GNEISS zones of SCHIST and GRANODIORITE; very dark gray and white (10 YR 2/1); and (Gley 8/1); fine to medium grained | End of day 4/18/06, water at 4 ft<br>Begin day 4/19/06, no water to 74 ft |
| 74–79 | 3 | 5.0/5.0 | 100 | F | R4 | | | Foliation from 76 to 77 ft.<br>AMPHIBOLITE SCHIST with GRANODIORITE intrusions | |
| 79–84 | 4 | 5.0/5.0 | 100 | F, SW | R4 | | | | |
| 84–89 | 5 | 5.0/5.0 | 86 | F, SW, F | R4 | | | AMPHIBOLITE SCHIST; dark gray (10 YR 2/1); fine grained; foliation ~30°<br>GRANODIORITE with SCHIST intrusions; fine to medium grained | |
| 89–94 | 6 | 5.0/5.0 | 88 | F | R4 | | | MIGMATITE GNEISS | |
| 94–99 | 7 | 5.0/5.0 | 88 | F | R4 | | | | |
| 99–104 | 8 | 5.0/5.0 | 86 | F | R4 | | | With flowing bands of SCHIST and GRANODIORITE<br>MIGMATITE GNEISS with intrusions of SCHIST at 100.5 ft to 101.2 ft; fine to medium grained | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-401A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 104–108 | 9 | 5.0/5.0 | 20 | F | R4 | | | | | |
| 109–113 | 10 | 5.0/5.0 | 88 | F | R4 | | | Flowing texture with GRANODIORITE and SCHIST | | |
| 114 | 11 | 1.0/1.0 | 100 | F | R4 | | | | | |
| 115–119 | 12 | 5.0/5.0 | 100 | F | R4 | | | MIGMATITE GNEISS<br>CORING TERMINATED AT 120.0 ft. | | |
| 120 | | | | | | | | | Boring terminated at 120 ft, water at 4 ft. on 4/19/06 | |

Project Name : Job Number
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SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-401B

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary / 6 inch | Boring Location<br>Cooling Tower | | Total Depth<br>120 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>404 feet | Ground Water Depth | Depth to Bedrock<br>64 feet |
| Sampling Method (Boring)<br>Split Spoon | Elevation at Well<br>404.1 feet | No. of Samples<br>17 | Date Started (Well)<br>5/11/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce | Date Completed (Well)<br>5/11/06 |

Reviewed by / Date M. Cooke 5/23/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–2 | | | | | | | | | ML | **SILT** sandy (ML); moderate reddish brown (10 R 4/6); damp; stiff; fine sand ~30%; low plasticity; FILL | NOTE: Samples and Lithology Information are from adjacent boring.<br>Fill | |
| 2–8 | | | | | | | | | ML | **SILT** sandy (ML); moderate reddish brown (10 YR 4/6); moist; very stiff; fine sand ~ 40%; low plasticity; RESIDUUM<br>**SILT** sandy (ML); moderate red (5 R 4/6); moist; very stiff; fine sand ~10%; low plasticity; slightly micaceous; RESIDUUM<br>**SILT** sandy (ML); moderate reddish brown (10 R 4/6); moist; stiff; fine sand ~ 40%; low plasticity; slightly micaceous; RESIDUUM | Residuum | |
| 8–40 | | | | | | | | | ML | **SILT** sandy (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~40%; low plasticity; slightly micaceous; SAPROLITE<br>**SILT** (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~5%; low plasticity; micaceous; banded; SAPROLITE<br>SAA<br>SAA<br>SAA; ~10% fine sand<br>SILT (ML); moderate reddish brown (10 R 4/6); moist; stiff; fine sand ~5%; low plasticity; micaceous; SAPROLITE<br>**SILT** sandy (ML); pale reddish brown (10 R 5/4); moist; stiff; fine sand ~10%; low plasticity; micaceous; SAPROLITE<br>**SILT** sandy (ML); dark yellowish orange (10 YR 6/6); moist; very stiff; fine sand ~30%; low plasticity; micaceous; SAPROLITE<br>SAA | Saprolite<br>Hard drilling, check for rock at 26.5 ft<br>End of day 4/17/06<br>Begin day 4/18/06. No water to 28 ft | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-401B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–51 | | | | | | | | | | **SILT** sandy (ML); light brown (5 YR 5/6); moist; stiff; fine sand ~40%; low plasticity; slightly micaceous; SAPROLITE *(Continued from previous page)*<br><br>SAA<br><br>SAA | | |
| 52–55 | | | | | | | | | SM | **SAND** silty (SM); medium light gray (N 6 6/0); moist; medium dense; fine sand ~60%; SAPROLITE | | |
| 56–61 | | | | | | | | | ML | **SILT** sandy (ML); greenish black (N 2); moist; hard; fine sand ~30%; low plasticity; small quartz fragments; micaceous; SAPROLITE | | |
| 62–64 | | | | | | | | | ML | **SILT** sandy (ML); dark yellowish orange (10 YR 6/8); moist; hard; fine sand ~40%; low plasticity; small quartz fragments; PARTIALLY WEATHERED ROCK | Partially weathered rock | |
| 65 | | | | | | | | | | BORING TERMINATED AT 64.0 ft. see rock log | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-401B

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Mud Rotary / 6 inch | Cooling Tower | | 120 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Smith/Gregg / Fraste Multidrill XL | 404 feet | | 64 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 3.5 / 64 feet | 404.1 feet | 4 | 5/11/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | C. Bruce | 5/11/06 |

Reviewed by / Date M. Cooke 5/23/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 64–69 | 1 | 1.1/5.0 | 16 | RS; SW; F | R0 | | | AMPHIBOLITE SCHIST with GRANODIORITE; very dark gray and white (10 YR 2/1); and (Gley 1 8 /1); intrusion 30% foliated | Switched to coring. NQ sampler used (Triple tube samples) NOTE: Samples and Lithology Information are from adjacent boring. | |
| 69–74 | 2 | 4.5/5.0 | 76 | SW; F; HW | R4; R2 | | | GRANODIORITE; with amphibolite dikes and intrusions | | |
| 74–79 | 3 | 5.0/5.0 | 100 | F | R4 | | | MIGMATITE GNEISS zones of SCHIST and GRANODIORITE; very dark gray and white (10 YR 2/1); and (Gley 8/1); fine to medium grained; Foliation from 76 to 77 ft. | End of day 4/18/06, water at 4 ft Begin day 4/19/06, no water to 74 ft | |
| 79–84 | 4 | 5.0/5.0 | 100 | F; SW | R4 | | | AMPHIBOLITE SCHIST with GRANODIORITE intrusions | | |
| 84–89 | 5 | 5.0/5.0 | 86 | F; SW; F | R4 | | | AMPHIBOLITE SCHIST; dark gray (10 YR 2/1); fine grained; foliation ~30°; GRANODIORITE with SCHIST intrusions; fine to medium grained | | |
| 89–94 | 6 | 5.0/5.0 | 88 | F | R4 | | | MIGMATITE GNEISS | | |
| 94–99 | 7 | 5.0/5.0 | 88 | F | R4 | | | | | |
| 99–104 | 8 | 5.0/5.0 | 86 | F | R4 | | | With flowing bands of SCHIST and GRANODIORITE; MIGMATITE GNEISS with intrusions of SCHIST at 100.5 ft to 101.2 ft; fine to medium grained | | |

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-401B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 104–108 | 9 | 5.0/5.0 | 20 | F | R4 | | | | | |
| 109–113 | 10 | 5.0/5.0 | 88 | F | R4 | | | Flowing texture with GRANODIORITE and SCHIST | | |
| 114 | 11 | 1.0/1.0 | 100 | F | R4 | | | | | |
| 115–119 | 12 | 5.0/5.0 | 100 | F | R4 | | | MIGMATITE GNEISS<br>CORING TERMINATED AT 120.0 ft. | | |
| 120 | | | | | | | | | Boring terminated at 120 ft, water at 4 ft. on 4/19/06 | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-405

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary/Air Rotary / 6 inch | Boring Location<br>Cooling Tower | Total Depth<br>58.5 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>392 feet / Ground Water Depth | Depth to Bedrock<br>47.2 feet |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>392.6 feet / No. of Samples<br>13 | Date Started (Well)<br>5/11/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/15/06 |

Reviewed by / Date M. Cooke 5/15/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 1 1 1 | 14/18 | | | | | SM | **SAND** (SM); red (2.5 YR 5/6); dry; very loose; silty; trace mica | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 2 3 4 | 15/18 | | | | | | **SAND** silty (SM); orange red and black (10 YR 5/6, 10 R 3/4 and 2.5/N); dry; loose; fine; micaceous | |
| 4–5 | | SPT 3 | 3 4 5 | 16/18 | | | | | | SAA, color change to brown at 4.6 ft (10 YR 4/3); fine; heavily micaceous; SAPROLITE | |
| 5–8 | | | | | | | | | ML | **SILT** sandy (ML); orange and red (7.5 YR 5/8 to 10 R 3/6), 8 inch of pinkish white (7.5 YR 8/2); moist; stiff; SAPROLITE | Saprolite |
| 6–7 | | SPT 4 | 2 6 7 | 18/18 | | | | | | | |
| 9–10 | | SPT 5 | 5 13 12 | 16/18 | | | | | SM | **SAND** silty (SM); brown (7.5 YR 5/7); damp; medium dense; black bands, white vein from toe to 8 inch; SAPROLITE | |
| 11–12 | | SPT 6 | 7 8 12 | 16/18 | | | | | | SAA; olive yellow (2.5 Y 6/6); moist; medium dense; fine to coarse grained; foliated; black layered; some gravel grains | |
| 14–15 | | SPT 7 | 7 13 9 | 14/18 | | | | | | SAA; black and brown, white from 14.5 ft; medium dense; fines (2.5 YR 5/6); heavily micaceous | |
| 19–20 | | SPT 8 | 4 7 10 | 13/18 | | | | | | SAA; reddish yellow (7.5 YR 6/8); with sandier beige/white bands (10 YR 6/2); moist; medium dense; micaceous; manganese stains; SAPROLITE | |
| 24–25 | | SPT 9 | 5 7 9 | 18 | | | | | | **SAND** silty (SM); brown (10 YR 5/3); moist; medium dense; white, beige and orange; manganese staining; micaceous; SAPROLITE | |
| 29–30 | | SPT 10 | 5 9 14 | 18 | | | | | | SAA; grayish brown (10 YR 5/2); moist; medium dense; fine grained; orange manganese staining; SAPROLITE | |
| 34–35 | | SPT 11 | 30 20 29 | 14/18 | | | | | | **SAND** silty (SM); very dark brown (10 YR 3/3); moist; very dense; fine to medium grained; white to brown bands 1 to 4 inch; micaceous | |
| 38–39 | | SPT 12 | 6 50/0.5 | 4/6.5 | | | | | SM | | Partially weathered rock |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-405

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | **SAND** silty (SM); black and white salt and pepper (1 Gley 4/1); moist; fine to medium grained; micaceous; PARTIALLY WEATHERED ROCK *(Continued from previous page)* | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 20 50/1 | 6 7 | | | | | | **SAND** gravely (SM); pink (2.5 YR 8/3); and brown (2.5 Y R 5/2); moist; very dense; micaceous; PARTIALLY WEATHERED ROCK Tricone refusal 46.9 ft.; drilled with casing to 47.2 ft, see rock log | | |
| 45 | | | | | | | | | | | | |
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| 80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-405

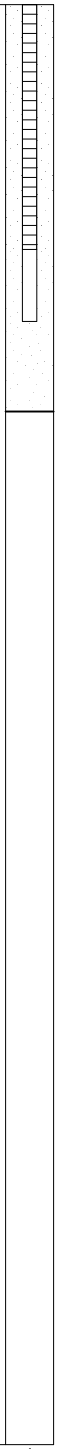
Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Mud Rotary/Air Rotary / 6 inch | Boring Location<br>Cooling Tower | | Total Depth<br>58.5 feet |
| Drilling Contractor and Rig<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>392 feet | Ground Water Depth | Depth to Bedrock<br>47.2 feet |
| Casing Size and Depth (Boring)<br>3.5 / 47.3 feet | Elevation at Well<br>392.6 feet | No. of Core Boxes<br>1 | Date Started<br>5/11/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce | Date Completed<br>5/15/06 |

Reviewed by / Date M. Cooke 5/15/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 48–52 | 1 | 4.5 / 5.4 | 51 | HW, MW, SW, MW | R1, R3, R2 | | | PEGMATITE K-spar and quartz; large grained; highly weathered granodiorite, orthoclase, quartz; moderately weathered pegmatite, granite grains<br>GNEISS, quartz, mica, biotite, orthoclase, foliated 60°, medium size grains<br>CORING TERMINATED AT 52.6 ft. | NOTE: Samples and Lithology Information are from adjacent boring.<br>Rapid bit advance 47.4 to 47.8 ft<br>End of drilling 4/13/06; water at 32 ft. |

WELL



See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-501

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary / 6 inch | Boring Location<br>Makeup Water Structure | | Total Depth<br>80 feet |
| Drilling Contractor and Rig (for Well)<br>White/MACTEC / CME 55 | Elevation at Boring<br>430 feet | Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>429.5 feet | No. of Samples<br>25 | Date Started (Well)<br>8/2/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Gandy | Date Completed (Well)<br>8/2/06 |

Reviewed by / Date M. Cooke 8/4/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 10 13 16 | 14/18 | | | | | ML | SILT (ML); red and brown (10 R 4/8 and 10 YR 6/4); dry; very stiff; with trace gravel and organics (small roots); FILL | NOTE: Samples and Lithology Information are from adjacent boring. Fill |
| 2–3 | | SPT 2 | 6 9 12 | 15/18 | | | | | SM | SAND silty, clayey (SM); brown, gray (10 YR 5/3); dry to moist; medium dense | |
| 4–5 | | SPT 3 | 7 9 11 | 10/18 | | | | | | SAA | |
| 6–7 | | SPT 4 | 3 3 2 | 0/18 | | | | | | No recovery | MACTEC Diedrich D50, Cain serial # 100 use to drill 0 to 11 ft; MACTEC Raleigh CME 55 LC, White serial # 331145 use to drill deeper than 11 ft |
| 9–10 | | SPT 5 | 5 15 14 | 7/18 | | | | | | SAA | |
| 11–12 | | SPT 6 | 50/3 | 5/3 | | | | | SM | SAND silty (SM); reddish brown (2.5 YR 4/4); moist; very dense due to gravel; with 1 inch diameter gravel; non plastic; organics; FILL | Refusal in rubble fill 7/22/06 at 11 ft<br>Offset 10 ft; retry; refusal at offset on 7/22/06 |
| 14–15 | | SPT 7 | 1 2 2 | 4/18 | | | | | | SAA; reddish brown (5 YR 4/4); very loose | Begin day 7/25/06; used casing advancing for CME 55 LC MACTEC Raleigh |
| 16–17 | | SPT 8 | 1 1 1 | 6.5/18 | | | | | | SAA; very loose | |
| 19–20 | | SPT 9 | 0 1 1 | 4/18 | | | | | SP | SAND (SP); yellowish red (5 YR 5/8); wet; very loose; non plastic; organics; no silt; FILL | |
| 22–23 | | SPT 10 | 1 2 1 | 10/18 | | | | | ML | SILT sandy (ML); strong brown (7.5 YR 5/6); very soft; moist to wet; low plasticity; 65% silt, 35% sand; organics; FILL | |
| 24–25 | | SPT 11 | 3 2 4 | 18/18 | | | | | | SILT sandy, gravely (ML); brown (7.5 YR 5/4); moist; medium stiff due to gravel; low plasticity; gravel ~1 inch in diameter; FILL | |
| 26–27 | | SPT 12 | 2 3 3 | 18/18 | | | | | | | |
| 27–28 | | | | | | | | | CL-ML | CLAY sitly (CL-ML); dark reddish brown; (2.5 YR 3/4); moist; medium stiff; medium plasticity; 70% clay, 25% silt; 5% sand; micaceous; RESIDUUM | Bottom of fill, top of residuum |
| 29–30 | | SPT 13 | 3 4 5 | 18/18 | | | | | | SAA; dark red (2.5 YR 3/6); damp; stiff; medium plasticity; ~50/50% clay and silt; increasing mica content; RESIDUUM | |
| 34–35 | | SPT 14 | 3 2 3 | 18/18 | | | | | | CLAY, silty, sandy (CL-ML); damp to moist; medium stiff; 45% clay, 45% silt, 10% sand; micaceous | End of day 7/25/06<br>Begin day 7/26/06 |
| 39–40 | | SPT 15 | 1 3 3 | 16/18 | | | | | | SAA; yellowish red (5 YR 4/6); damp; medium stiff; medium plasticity | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-501

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–41 | | | | | | | | | SM | SAND silty, gravely (SM); red (2.5 YR 4/8); wet; medium stiff; 80% sand, 20% silt; non plastic; micaceous; gravel ~1 inch diameter | | |
| 42 | | | | | | | | | ML | *(Continued from previous page)* | Saprolite | |
| 43–44 | | SPT 16 | 3 3 5 | 18/18 | | | | | | SILT sandy (ML); reddish brown (5 YR 4/4); damp; medium stiff; low plasticity; 80% silt, 20% sand; micaceous; SAPROLITE | | |
| 45–48 | | | | | | | | | | | | |
| 49–50 | | SPT 17 | 5 5 8 | 18/18 | | | | | | SAA; very dark brown (7.5 YR 2.5/2) to light brown (7.5 YR 6/3); stiff | | |
| 51–53 | | | | | | | | | | | | |
| 54–55 | | SPT 18 | 5 12 20 | 18/18 | | | | | | SAA; except hard; 70% silt, 30% sand | | |
| 56–58 | | | | | | | | | | | | |
| 59 | | SPT 19 | 12 17 27 | 16/18 | | | | | | SAA | | |
| 60–63 | | | | | | | | | | SILT sandy (ML); black (7.5 YR 2.5/1); damp; hard; low plasticity; 80% silt, 20% sand; micaceous; SAPROLITE | | |
| 64–65 | | SPT 20 | 24 50/6 | 11/12 | | | | | | SILT sandy (ML); light brown (7.5 YR 6/3); to black (7.5 YR 2.5/1) | | |
| 66–68 | | | | | | | | | | | | |
| 69–70 | | SPT 21 | 22 37 47 | 15.5/18 | | | | | | SAA | | |
| 71–73 | | | | | | | | | | | | |
| 74–75 | | SPT 22 | 39 50/4 | 11/10 | | | | | | SAA; pebble to gravel size clasts; angular ~20% volume | | |
| 76–78 | | | | | | | | | | | | |
| 79–80 | | SPT 23 | 22 27 50/2 | 12/14 | | | | | | SAA; strong brown (7.5 YR 5/6); 55% silt, 45% sand | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-501

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | BORING TERMINATED at 80 ft | 7/26/06; water level at 20.7 ft<br>7/27/06; water level at 20.4 ft<br>Borehole terminated at 80 ft on 7/26/06 | |
| 81 | | | | | | | | | | | | |
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| 118 | | | | | | | | | | | | |
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| 120 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-612

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary / 6 inch | Boring Location<br>Relocated Access Road | Total Depth<br>70 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>405 feet | Ground Water Depth / Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>406.8 feet | No. of Samples<br>16 / Date Started (Well)<br>5/2/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce / Date Completed (Well)<br>5/2/06 |

Reviewed by / Date M. Cooke 5/8/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 6 6 7 | 11/18 | | | | | ML | **SILT** sandy (ML); red (10 R 4/6); damp; medium stiff; 70% silt, 30% fine grained sand, trace clay; with root fragments; some mica; low plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 6 7 9 | 11.5/18 | | | | | SM | **SAND** silty (SM); dark red (10 R 3/6); damp; loose; 50 to 60 % fine grained sand; 40 to 50 % silt; trace clay; some mica; RESIDUUM | |
| 4–5 | | SPT 3 | 3 6 7 | 12.5/18 | | | | | ML | **SILT** sandy (ML); red (10 R 4/8); moist; medium stiff; 70 to 80% silt; 20 to 30% fine grained sand; low plasticity; micaceous; RESIDUUM | |
| 6–7 | | SPT 4 | 4 5 6 | 7/18 | | | | | | SAA | |
| 8–9 | | SPT 5 | 3 3 3 | 9/18 | | | | | SM | **SAND** silty (SM); yellowish red (5 YR 4/6); moist; loose; 50 to 60% fine grained sand; 40 to 50% silt; RESIDUUM | |
| 11–12 | | SPT 6 | 2 3 3 | 11/18 | | | | | | SAA | |
| 14–15 | | SPT 7 | 3 5 4 | 9/18 | | | | | SM | **SAND** silty (SM); yellowish red (5 YR 4/6); moist; loose; 50 to 60% fine grained sand; 40 to 50% silt; ; some faint remnant structure; micaceous from 14.8 to 15 ft; SAPROLITE Thin zones of less silty sand (possibly SP) at 15 and 19 ft | Saprolite<br>End of day 4/12/06; water level 5.7 ft<br>Begin day 4/13/06 |
| 19–20 | | SPT 8 | 3 1 4 | 12/18 | | | | | | **SAND** silty (SM); dark yellowish brown (10 YR 3/4); moist; very loose; 60 to 70% fine grained sand; 30 to 40% silt; micaceous; SAPROLITE | |
| 24–25 | | SPT 9 | 3 4 7 | 14/18 | | | | | | **SAND** silty (SM); light olive brown (2.5 Y 5/3); moist; loose; 70 to 80% fine to medium grained; sand; trace coarse grained sand; 20 to 30% silt; micaceous; SAPROLITE | |
| 28–29 | | SPT 10 | 2 4 4 | 17/18 | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 3/6); loose; 70 to 80% silt; 20 to 30% fine grained sand; micaceous; SAPROLITE<br>SAA; color change becoming light olive brown 2.5 Y 5/6 | |
| 34–35 | | SPT 11 | 3 4 5 | 18/18 | | | | | | SAA; brown (7.5 YR 4/3); moist; medium stiff; 80 to 90% silt; 10 to 20% fine grained sand; micaceous; faint relict sub horizontal foliation; abundant black manganese staining; SAPROLITE | Hard drilling from 34.7 to 35.0 ft |
| 37–38 | | | | | | | | | SM | SAND sitly (SM); dark yellowish brown (10 YR 4/6); moist; loose; 50 to 60% fine grained sand; micaceous; thin stringers of manganese staining throughout; SAPROLITE | |
| 39–40 | | SPT 12 | 3 3 5 | 15/18 | | | | | | | |

WELL

Project Name : Job Number

MACTEC

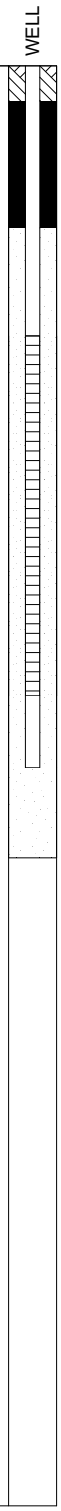
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-612

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–41 | | | | | | | | | | | Harder drilling from 39.7 to 40.0 ft |
| 42–43 | | | | | | | | | ML | SILT sandy (ML); dark yellowish brown (10 YR 4/4); moist; very stiff; SAPROLITE | Harder drilling from 42.5 to 43.5 ft |
| 44–45 | | SPT 13 | 5 7 10 | 18/18 | | | | | | | |
| 46–47 | | | | | | | | | | | |
| 48–49 | | | | | | | | | SM | **SAND** silty (SM); grayish brown (2.5 Y 5/2); moist; medium dense; 70% fine grained sand; some coarse grained weathered quartz; 30% silt; SAPROLITE | |
| 49–50 | | SPT 14 | 12 14 10 | 18/18 | | | | | | | |
| 50–53 | | | | | | | | | | SAA; olive brown (2.5 Y 4/3) | |
| 54–55 | | SPT 15 | 8 11 13 | 15.5/18 | | | | | | SILT sandy (SM) with gravel; highly weathered granitic fragments (mostly quartz); up to 1 cm in diameter | |
| 56–58 | | | | | | | | | | | Very hard drilling from 57.0 to 57.5 ft |
| 59 | | SPT 16 | 50/5 | 5/5 | | | | | SM | **SAND** silty (SM); very dark grayish brown (2.5 Y 3/2); moist; very dense; 70 to 80% medium grained to fine grained sand; 20 to 30% silt; same coarse grained quartz; PARTIALLY WEATHERED ROCK | Partially weathered rock Hard drilling below 59.0 ft |
| 60–61 | | | | | | | | | | | Drilling very hard; cuttings of quartz |
| 62 | | SPT 17 | 50/0 | 0/0 | | | | | | BORING TERMINATED AT 62.0 ft. | Refusal at 62 ft on 4/13/06; water level at 5.5 ft 4/14/06; water level at 17 ft |
| 63–80 | | | | | | | | | | | |

WELL



Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-614

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Mud Rotary / 6 inch | Boring Location: Relocated Access Road | Total Depth: 34.8 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Fraste Multidrill XL | Elevation at Boring: 375 feet / Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring): Standard | Elevation at Well: 376.1 feet / No. of Samples: 11 | Date Started (Well): 5/8/06 |
| | Borehole Inclination: 0 / Logged by: C. Bruce | Date Completed (Well): 5/8/06 |

Reviewed by / Date: M. Cooke 5/8/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 7 | 12/18 | | | | | SM | **SAND** silty (SM); reddish brown (2.5 YR 4/4); dry; loose; organic roots | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 1–3 | | SPT 2 | 4 3 2 | 10/18 | | | | | | SAND very sitly (SM); red (2.5 YR 4/6); dry; loose; | |
| 3–5 | | SPT 3 | 2 5 8 | 12/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 3/6); damp; stiff | |
| 5–7 | | SPT 4 | 6 10 14 | 15/18 | | | | | | **SILT** sandy (ML); red (2.5 to 2.5/2); damp; very stiff; very dusky | |
| 7–9 | | SPT 5 | 6 10 13 | 18/18 | | | | | | SAA | Losing circulation |
| 9–11 | | SPT 6 | 5 11 13 | 18 | | | | | | SAA; red (2.5 YR 3/6); dry; very stiff; | |
| 11–14 | | SPT 7 | 4 6 9 | 18 | | | | | | SAA; reddish brown (5 YR 5/4); damp; micaceous; lower sand content than above | |
| 14–19 | | SPT 8 | 2 3 4 | 12/18 | | | | | ML | **SILT** (ML); orange, beige, black (5 YR 5/8), (5 YR 7/2), (5 YR 2.5/1); moist; medium stiff; micaceous; SAPROLITE | Saprolite |
| 19–24 | | SPT 9 | 2 2 4 | 14/18 | | | | | | **SILT** (ML); brown (7.5 YR 3/4); medium stiff; micaceous; SAPROLITE | |
| 24–29 | | SPT 10 | 3 3 7 | 18 | | | | | SM | **SAND** silty (SM); brown (7.5 YR 5/3); moist; loose to medium dense; manganese staining; micaceous; SAPROLITE | |
| 29–34 | | SPT 11 | 50/2 | 2/2 | | | | | SM | **SAND** silty (SM); dark gray pepper appearance (Grey 4/1); PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 34.8 ft. | Partially weathered rock<br>Refusal on 4/12/06 |

WELL

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-617

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Hollow Stem Auger / 6.25 inch | Boring Location<br>Existing Access Road | | Total Depth<br>108 feet |
| Drilling Contractor and Rig (for Well)<br>Poole/Gregg / Rhino | Elevation at Boring<br>450.1 feet | Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>447.2 feet | No. of Samples<br>25 | Date Started (Well)<br>5/24/06 |
| | Borehole Inclination<br>0 | Logged by<br>C Gandy | Date Completed (Well)<br>5/24/06 |

Reviewed by / Date M. Cooke 6/14/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 3 7 9 | 11/18 | | | | | ML | **SILT** (ML); dark red (10 R 3/4); dry; stiff; trace sand and mica; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 11 15 20 | 12/18 | | | | | | **SILT** (ML); dark red (10 R 3/4); dry; hard; trace sand and mica | |
| 4–5 | | SPT 3 | 8 13 15 | 18/18 | | | | | | SAA | |
| 6–7 | | SPT 4 | 8 13 19 | 18/18 | | | | | | SAA | |
| 9–10 | | SPT 5 | 7 8 10 | 18/18 | | | | | | **SILT** (ML); dark red (10 R 3/6); dry; very stiff; trace fine sand and mica | |
| 11–12 | | SPT 6 | 9 11 13 | 18/18 | | | | | | **SILT** (ML); red (2.5 YR 4/6); very stiff; sandy, gravel at 12.4 to 12.8 ft. | |
| 14–15 | | SPT 7 | 9 12 16 | 18/18 | | | | | | SAA; no gravel; stiff | |
| 19–20 | | SPT 8 | 8 12 23 | 18/18 | | | | | | **SILT** (ML) yellowish red (5 YR 5/8); dry; hard; trace fine sand | |
| 22–23 | | | | | | | | | SM | **SAND** silty (SM); reddish yellow (7.5 YR 6/8); dry; medium dense | |
| 24–25 | | SPT 9 | 6 9 12 | 18/18 | | | | | | | |
| 29–30 | | SPT 10 | 5 7 10 | 18/18 | | | | | | **SAND** silty (SM); red (10 R 4/8); medium dense; fine sand; with 5% coarse sand/fine gravel at 29 ft | |
| 34–35 | | SPT 11 | 3 6 10 | 18/18 | | | | | ML | **SILT** sandy (ML); red (5 YR 5/8); slightly damp; very stiff; coarse sand and gravel; trace mica; SAPROLITE | Saprolite |
| 38–39 | | SPT 12 | 3 5 8 | 18/18 | | | | | SM | **SAND** silty (SM); mottled white, pale red (10 R 7/6); orange to white with black streaks; slightly damp; medium dense; little to no mica; SAPROLITE | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-617

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | **SAND** silty (SM); mottled white, pale red (10 R 7/6); orange to white with black streaks; slightly damp; medium dense; little to no mica; SAPROLITE *(Continued from previous page)* | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 3 6 9 | 16/18 | | | | | | SAA; more pale red | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | ML | **SILT** (ML); strong brown (7.5 YR 5/8); brownish orange with black vein, white veins; damp; stiff; little mica; SAPROLITE | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 4 6 8 | 18/18 | | | | | | | | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | SPT 15 | 5 7 9 | 16/18 | | | | | | SAA 54 to 55.5 ft red (10 R 4/8); and some white silt, trace mica; SAPROLITE | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | |
| 59 | | SPT 16 | 3 6 9 | 17/18 | | | | | | **SILT** sandy (ML); strong brown (7.5 YR 4/6); stiff; trace mica; SAPROLITE | | |
| 60 | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | |
| 62 | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | |
| 64 | | SPT 17 | 4 8 10 | 16/18 | | | | | | SILT sandy (ML); brown/orange (5 YR 5/8); yellowish red; very stiff; fine sand; SAPROLITE | | |
| 65 | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | | | | | | | | | | | | |
| 68 | | | | | | | | | | | | |
| 69 | | SPT 18 | 4 7 9 | 18/18 | | | | | | **SILT** (ML); brown (7.5 YR 5/8); very stiff; micaceous; SAPROLITE | | |
| 70 | | | | | | | | | | | | |
| 71 | | | | | | | | | | | | |
| 72 | | | | | | | | | | | | |
| 73 | | | | | | | | | | | | |
| 74 | | SPT 19 | 7 10 12 | 18/18 | | | | | | **SILT** (ML); brown to white; very stiff; micaceous; SAPROLITE | | |
| 75 | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | |
| 77 | | | | | | | | | | | | |
| 78 | | | | | | | | | | | | |
| 79 | | SPT 20 | 7 10 13 | 18/18 | | | | | | **SILT** sandy (ML); brown (7.5 YR 5/8); dry; very stiff; black veins; SAPROLITE | | |
| 80 | | | | | | | | | | | | |

Project Name : Job Number

MACTEC

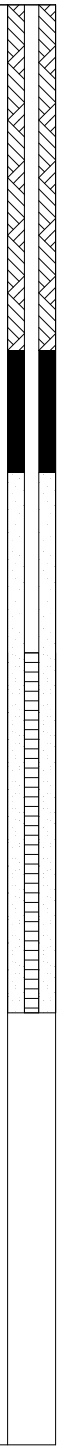
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-617

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | **SILT** (ML); strong brown (7.5 YR 5/8); brownish orange with black vein, white veins; damp; stiff; little mica; SAPROLITE *(Continued from previous page)* | |
| 81 | | | | | | | | | | | |
| 82 | | | | | | | | | | | |
| 83 | | | | | | | | | | | |
| 84 | | SPT 21 | 8 12 12 | 18/18 | | | | | | SAA; with layer 84 to 84.4 ft white; silt with gravel | |
| 85 | | | | | | | | | | | |
| 86 | | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | | | | | | | | | | | |
| 89 | | SPT 22 | 6 11 15 | 18/18 | | | | | | **SILT** sandy (ML); brown (7.5 YR 5/8); dry; very stiff; black veins; mica; SAPROLITE | End of day 4/5/06 Begin day 4/6/06; no water to 88.5 ft |
| 90 | | | | | | | | | | | |
| 91 | | | | | | | | | SM | **SAND** silty (SM); white with some orange and black (10 YR 8/4); dense; very pale brown; mica; quartz gravel in tip of spoon | |
| 92 | | | | | | | | | | | |
| 93 | | SPT 23 | 11 12 22 | 18/18 | | | | | | | |
| 94 | | | | | | | | | | | |
| 95 | | | | | | | | | | | |
| 96 | | | | | | | | | SM | **SAND** silty (SM); white with brown and black specks; very dense; fine to coarse sand size; SAPROLITE | More difficult drilling |
| 97 | | | | | | | | | | | |
| 98 | | | | | | | | | | | |
| 99 | | SPT 24 | 23 38 50/5 | 12/17 | | | | | | **SAND** (SM); brown (7.5 YR 7/8); very dense; fine; no coarse sand; black veins; mica; PARTIALLY WEATHERED ROCK | |
| 100 | | | | | | | | | | | |
| 101 | | | | | | | | | | | |
| 102 | | | | | | | | | | | |
| 103 | | | | | | | | | | | |
| 104 | | SPT 25 | 50/2 | 2/2 | | | | | SM | **SAND** silty (SM); black with white pepper appearance; wet; very dense; PARTIALLY WEATHERED ROCK | |
| 105 | | | | | | | | | | BORING TERMINATED AT 105.0 ft. | Refusal at 105.0 ft. on 4/6/06; water level at 104 ft |
| 106 | | | | | | | | | | | |
| 107 | | | | | | | | | | | NOTE: Unslotted sump section occupies last 0.5 ft of screen length as shown |
| 108 | | | | | | | | | | | |
| 109 | | | | | | | | | | | |
| 110 | | | | | | | | | | | |
| 111 | | | | | | | | | | | |
| 112 | | | | | | | | | | | |
| 113 | | | | | | | | | | | |
| 114 | | | | | | | | | | | |
| 115 | | | | | | | | | | | |
| 116 | | | | | | | | | | | |
| 117 | | | | | | | | | | | |
| 118 | | | | | | | | | | | |
| 119 | | | | | | | | | | | |
| 120 | | | | | | | | | | | |

WELL



Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-618

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Hollow Stem Auger / 6.25 inch | Boring Location<br>South of Switchyard | Total Depth<br>32.6 feet |
| Drilling Contractor and Rig (for Well)<br>Poole/Gregg / Rhino | Elevation at Boring<br>308.2 feet / Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>307.4 feet / No. of Samples<br>10 | Date Started (Well)<br>5/12/06 |
| | Borehole Inclination<br>0 / Logged by<br>B. Sharp | Date Completed (Well)<br>5/12/06 |

Reviewed by / Date M. Cooke 5/22/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 4 6 | 10/18 | | | | | SM | **SAND** silty (SM); dark reddish brown (5 YR 3/4); dry; loose; trace clay; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 15 21 22 | 18/18 | | | | | | **SAND** silty (SM); reddish gray (5 YR 5/2); dry; dense | |
| 4–5 | | SPT 3 | 9 13 19 | 18/18 | | | | | | **SAND** silty (SM); pale yellow (5 Y 7/3); dry; dense | |
| 6–7 | | SPT 4 | 10 13 10 | 18/18 | | | | | | **SAND** (SM); pale olive (5 Y 6/4); dry; medium dense; fine to gravel | |
| 9–10 | | SPT 5 | 7 9 10 | 18/18 | | | | | | **SAND** silty (SM); olive (5 Y 4/3) and orange; medium dense; micaceous | |
| 11–12 | | SPT 6 | 10 11 15 | 18/18 | | | | | | SAA | |
| 14–15 | | SPT 7 | 9 16 27 | 16/18 | | | | | | **SAND** silty (SM); dark olive gray (5 Y 3/2); dry; dense; fine to medium grained; micaceous | |
| 19–20 | | SPT 8 | 10 14 16 | 14/18 | | | | | SM | **SAND** silty (SM); olive gray (5 Y 5/4); moist; medium dense to dense; micaceous; SAPROLITE | Saprolite |
| 24–25 | | SPT 9 | 20 31 20 | 15/18 | | | | | | **SAND** silty (SM); olive gray (5 Y 5/4); wet; very dense; poorly sorted; fine to fine gravel; trace mica; SAPROLITE | |
| 29–30 | | SPT 10 | 2 5 17 | 12/18 | | | | | | **SAND** silty (SM); dark gray olive tint (5 Y 4/1); wet; medium dense; fine to very coarse to gravel; micaceous; gravel 15%; SAPROLITE<br>BORING TERMINATED AT 32.6 ft. | |
| 33 | | | | | | | | | | | Auger refusal at 32.6 ft on 4/10/06. Water level at 13 ft |

WELL

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-619

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>West of Southern Nuclear Island | Total Depth<br>104 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>405.1 feet / Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>405.7 feet / No. of Samples<br>18 | Date Started (Well)<br>5/27/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/28/06 |

Reviewed by / Date M. Cooke 6/14/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 4 4 | 12/18 | | | | | CL-ML | **CLAY** silty (CL-ML); dark reddish brown (2.5 Y 3/4); damp; medium stiff; 10% fine grained sand; some roots; low plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 3 4 7 | 17/18 | | | | | ML | SILT sandy (ML); dark red (10 R 3/6); dry to damp; medium stiff; 15 to 25% fine grained sand; low plasticity; RESIDUUM | |
| 4–5 | | SPT 3 | 6 9 12 | 18/18 | | | | | | SAA; dark reddish brown (5 YR 3/4); very stiff | |
| 6–7 | | SPT 4 | 5 7 10 | 17/18 | | | | | ML | SAA; some weathered quartz fragments from 7.4 to 7.5 ft; some manganese staining | |
| 9–10 | | SPT 5 | 5 5 7 | 10/18 | | | | | | SAND silty (SM); dark reddish brown (5 YR 3/4); grading down to dark olive brown (2.5 Y 3/3); damp; medium dense; micaceous; RESIDUUM | |
| 11–12 | | SPT 6 | 5 5 7 | 17/18 | | | | | SM | SAA; olive brown (2.5 Y 4/4) 30 to 40% silt<br>SAA; olive brown (2.5 Y 4/4); 30 to 40% silt | |
| 14–15 | | SPT 7 | 5 8 8 | 13/18 | | | | | | SAA | |
| 19–20 | | SPT 8 | 6 6 10 | 15/18 | | | | | | SAA; light olive brown (2.5 Y 5/4); damp; loose; 30 to 40% silt; micaceous; some manganese staining; RESIDUUM | End day 4/10/06, no water encountered<br>Begin day 4/11/06, no water encountered |
| 24–25 | | SPT 9 | 7 7 10 | 18/18 | | | | | | SAA; grading down to yellowish brown (10 YR 5/8) | |
| 29–30 | | SPT 10 | 6 7 8 | 13/18 | | | | | | SAA | |
| 34–35 | | SPT 11 | 9 9 10 | 18/18 | | | | | | SAA; brown (7.5 YR 4/4); damp; medium dense; 30 to 40% silt; micaceous; RESIDUUM | |
| 39–40 | | SPT 12 | 8 11 14 | 18/18 | | | | | SM | SAND silty (SM); pale olive (5 Y 6/4); damp; medium dense; 30 to 40% silt; SAPROLITE | Saprolite at 38.5 ft |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-619

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | SAND silty (SM); pale olive (5 Y 6/4); damp; medium dense; 30 to 40% silt; SAPROLITE *(Continued from previous page)* | | |
| 44–45 | | SPT 13 | 8 10 14 | 18/18 | | | | | | SAA | | |
| 46–47 | | | | | | | | | | | | |
| 48–50 | | SPT 14 | 7 9 11 | 18/18 | | | | | ML | **SILT** clayey (ML); yellowish brown (10 YR 5/6); moist; very stiff; fine grained sand 10% mottled; SAPROLITE | | |
| 51–52 | | | | | | | | | | | | |
| 53–55 | | SPT 15 | 8 12 14 | 17/18 | | | | | SP-SM | **SAND** silty (SP-SM); dark yellowish brown (10 YR 3/6); moist; medium dense; fine grained sand; 10% silt; micaceous; abundant mafic mineral; faint sub horizontal foliation; SAPROLITE | | |
| 56–58 | | | | | | | | | | | | |
| 59–60 | | SPT 16 | 8 14 16 | 18/18 | | | | | | SAA | | |
| 61–63 | | | | | | | | | | | | |
| 64–65 | | SPT 17 | 9 50/1 | 7/6 | | | | | SP-SM | **SAND** (SP-SM); dark olive brown (2.5 Y 3/3); moist; very dense; fine grained sand; some silt; micaceous; relict mafic minerals; faint sub horizontal structure; PARTIALLY WEATHERED ROCK | Partially weathered rock | |
| 66–67 | | SPT 18 | 50/0 | 0/0 | | | | | | BORING TERMINATED AT 66.0 ft | Auger refusal on 4/11/06; no water | |
| 68–80 | | | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG SOIL - Well No. OW-619**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | |
| 81 | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | |
| 83 | | | | | | | | | | | | |
| 84 | | | | | | | | | | | | |
| 85 | | | | | | | | | | | | |
| 86 | | | | | | | | | | | | |
| 87 | | | | | | | | | | | | |
| 88 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-620

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary / 6 inch | Boring Location<br>North of Northern Nuclear Island | Total Depth<br>100 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>381.7 feet / Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring) | Elevation at Well<br>382.8 feet / No. of Samples | Date Started (Well)<br>4/30/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/1/06 |

Reviewed by / Date M. Cooke 5/8/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 1 2 3 | 14/18 | | | | | CL-ML | **CLAY** silty sandy (CL-ML); dark brown (10 YR 3/3); moist; medium stiff; 50% clay, 20% silt, 30% sand; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum Saprolite | |
| 2–3 | | SPT 2 | 2 3 8 | 16/18 | | | | | ML | **SILT** sandy (ML); brown (10 YR 4/3); moist; stiff; 70% silt, 30% sand; low plasticity; contains small roots; SAPROLITE | | |
| 4–5 | | SPT 3 | 13 21 39 | 18/18 | | | | | SM | **SAND** silty (SM); dark yellowish brown (10 YR 4/6); damp; very dense; 70% sand, 30% silt; slightly micaceous; SAPROLITE | | |
| 6–7 | | SPT 4 | 7 20 13 | 18/18 | | | | | | SAA; pale brown (10 YR 6/3); damp; dense; 75% sand, 25% silt; contains quartz angular rock fragments; SAPROLITE | | |
| 9–10 | | SPT 5 | 5 9 11 | 18/18 | | | | | | SAA; light brownish gray (10 YR 6/2); damp; medium dense; 60% sand; 40% silt; grades to 50% silt, 50% sand from 8.5 to 9.0 ft and (10 YR 4/3); slightly micaceous; SAPROLITE | | |
| 12–13 | | SPT 6 | 6 9 13 | 18/18 | | | | | | SAA; gray (10 YR 6/1); damp; medium dense; 70% sand, 30% silt; slightly micaceous; SAPROLITE | | |
| 14–15 | | SPT 7 | 7 8 10 | 14/18 | | | | | | SAA; light brownish gray (10 YR 6/2); damp; medium dense; 70% sand, 30% silt; slightly micaceous; SAPROLITE | | |
| 19–20 | | SPT 8 | 5 7 10 | 18/18 | | | | | | SAA; light brownish gray (10 YR 6/2); damp; medium dense; 65% sand, 35% silt; slightly micaceous; SAPROLITE | | |
| 22–23 | | | | | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 4/4); moist; very stiff; 75% silt, 25% sand; low plasticity; very slightly micaceous; SAPROLITE | | |
| 24–25 | | SPT 9 | 4 7 9 | 18/18 | | | | | | | | |
| 27–28 | | | | | | | | | SM | **SAND** silty (SM); light yellowish brown (2.5 Y R 6/4); moist; medium dense; 65% sand, 35% silt; slightly micaceous; SAPROLITE | | |
| 29–30 | | SPT 10 | 6 7 9 | 18/18 | | | | | ML | **SILT** sandy (ML); yellowish brown (10 YR 5/4); moist; very stiff; 75% silt, 25% sand; low plasticity; slightly micaceous; SAPROLITE | | |
| 32–33 | | | | | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/4); moist; dense, 65% sand, 35% silt; slightly micaceous; SAPROLITE | | |
| 34–35 | | SPT 11 | 13 24 26 | 18/18 | | | | | | | | |
| 39–40 | | SPT 12 | 6 12 14 | 18/18 | | | | | | SAA; dark gray (10 YR 4/1); moist; medium dense; 55% sand, 45% silt; SAPROLITE | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-620

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–41 | | | | | | | | | | | End of day 4/7/06 water at 39 ft. Begin day 4/8/06 at 8:00 am water at 34.6 ft. |
| 42–43 | | | | | | | | | ML | **SILT** sandy (ML); brown (10 YR 5/3); moist; very stiff; 65% silt, 35% sand; no to low plasticity; micaceous; SAPROLITE | |
| 44–45 | | SPT 13 | 6 8 13 | 16/18 | | | | | | | |
| 46–47 | | | | | | | | | SM | **SAND** silty (SM); brown (10 YR 5/3); moist; dense; 60% sand, 40% silt; micaceous; SAPROLITE | |
| 48–49 | | SPT 14 | 7 11 24 | 12/18 | | | | | | | |
| 50–53 | | | | | | | | | | | |
| 54–55 | | SPT 15 | 6 11 22 | 13/18 | | | | | | SAA; dark grayish brown (10 YR 4/2); moist; dense; 60% sand, 40% silt; micaceous; SAPROLITE | |
| 56–57 | | | | | | | | | ML | **SILT** sandy (ML); brown (10 Y R 4/3); moist; hard; 55% silt, 45% sand; no to low plasticity; micaceous; SAPROLITE | |
| 58–59 | | SPT 16 | 9 17 35 | 14/18 | | | | | | | |
| 60–63 | | | | | | | | | | | |
| 64–65 | | SPT 17 | 10 18 27 | 13/18 | | | | | | SAA; dark grayish brown (10 YR 4/2); moist; hard; 55% silt, 45% sand; no to low plasticity; slightly micaceous; SAPROLITE | |
| 66–67 | | | | | | | | | | | |
| 68–69 | | SPT 18 | 22 50/4 | 10/10 | | | | | ML | **SILT** sandy (ML); grayish brown (10 YR 5/2); moist; hard; 55% silt; 45% sand; no to low plasticity; micaceous; PARTIALLY WEATHERED ROCK | |
| 70–71 | | | | | | | | | | | |
| 72–73 | | | | | | | | | ML | **SILT** sandy (ML); grayish brown (10 YR 5/2); moist; hard; 55% silt; 45% sand; no to low plasticity; micaceous; SAPROLITE | |
| 74–75 | | SPT 19 | 12 25 45 | 13/18 | | | | | | | |
| 76–77 | | | | | | | | | | | Partially weathered rock |
| 78–79 | | SPT 20 | 50/6 | 6/6 | | | | | SM | **SAND** silty (SM); grayish brown (10 YR 5/2); moist; very dense; 65% sand, 35% silt; micaceous; PARTIALLY WEATHERED ROCK | |
| 80 | | | | | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-620

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | **SAND** silty (SM); grayish brown (10 YR 5/2); moist; very dense; 65% sand, 35% silt; micaceous; PARTIALLY WEATHERED ROCK *(Continued from previous page)* | | |
| 81 | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | |
| 83 | | | | | | | | | | | | |
| 84 | | SPT 21 | 50/4 | 4/4 | | | | | | SAA; except yellowish brown (10 YR 5/4) | | |
| 85 | | | | | | | | | | | | |
| 86 | | | | | | | | | | | | |
| 87 | | | | | | | | | | | | |
| 88 | | | | | | | | | | | | |
| 89 | | SPT 22 | 50/5.5 | 5.5/5.5 | | | | | | SAA except dark grayish brown (10 YR 4/2) | | |
| 90 | | | | | | | | | | | | |
| 91 | | | | | | | | | | | | |
| 92 | | | | | | | | | | | | |
| 93 | | | | | | | | | | | | |
| 94 | | SPT 23 | 50/2.5 | 2.5/2.5 | | | | | | SAA; light brownish gray (10 YR 6/2); damp to moist; very dense; 70% sand, 30% silt; micaceous; PARTIALLY WEATHERED ROCK | | |
| 95 | | | | | | | | | | | | |
| 96 | | | | | | | | | | | | |
| 97 | | | | | | | | | | | | |
| 98 | | | | | | | | | | | | |
| 99 | | SPT 24 | 50/1 | 1/1 | | | | | | **SAND** silty (SM); grayish brown (10 YR 5/2); damp; very dense; 80% sand, 20% silt; PARTIALLY WEATHERED ROCK | | |
| 100 | | | | | | | | | | BORING TERMINATED AT 100.0 ft. | Boring terminated on 4/10/06 Begin day 4/11/06 at 8:30 am water at 31.6 ft | |
| 101 | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-621A

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: North of Northern Nuclear Island | Total Depth: 100 feet |
| Drilling Contractor and Rig (for Well): Nichols/McCall / IR T3W | Elevation at Boring: 421.5 feet; Ground Water Depth | Depth to Bedrock: 58.5 feet |
| Sampling Method (Boring): Standard | Elevation at Well: 420.9 feet; No. of Samples: 15 | Date Started (Well): 5/26/06 |
| | Borehole Inclination: 0; Logged by: B. Sharp | Date Completed (Well): 5/26/06 |

Reviewed by / Date: M. Cooke 6/14/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 3 4 4 | 15/18 | | | | | CL-ML | **CLAY** silty, sandy (CL-ML); yellowish red (5 YR 4/6); damp; medium stiff; 50% clay, 30% silt, 20% sand; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 6 8 9 | 16/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 5/8); damp; very stiff; 70% silt, 30% sand; no plasticity; RESIDUUM | |
| 4–5 | | SPT 3 | 6 7 7 | 15/18 | | | | | | **SILT** sandy (ML); red (2.5 YR 4/6); stiff; 85% silt, 15% sand; no plasticity; slightly micaceous; RESIDUUM | |
| 6–7 | | SPT 4 | 3 3 5 | 14/18 | | | | | | **SILT** (ML); yellowish brown (10 YR 5/4); medium stiff; 90% silt, 10% sand; no plasticity; RESIDUUM | |
| 9–10 | | SPT 5 | 5 7 8 | 15/18 | | | | | | **SILT** sandy (ML); dark red (2.5 YR 3/6); stiff; 80% silt, 20% sand; no plasticity; slightly micaceous; RESIDUUM | |
| 11–12 | | SPT 6 | 2 3 4 | 16/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 4/6); medium stiff; 85% silt, 15% sand; no plasticity; slightly micaceous; RESIDUUM | |
| 14–15 | | SPT 7 | 2 4 4 | 16.5/18 | | | | | | **SILT** sandy (ML); dark red (2.5 YR 3/6); medium stiff; 75% silt, 25% sand; no plasticity; micaceous; RESIDUUM | |
| 19–20 | | SPT 8 | 2 3 6 | 18/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 5/8); stiff; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | |
| 24–25 | | SPT 9 | 1 2 3 | 16/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 4/6); medium stiff; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | |
| 29–30 | | SPT 10 | 3 5 8 | 20/18 | | | | | | **SILT** sandy, clayey (ML); yellowish brown (10 YR 5/8); stiff; 70% silt, 30% sand; low to medium plasticity; slightly micaceous; RESIDUUM | |
| 34–35 | | SPT 11 | 5 9 13 | 19/18 | | | | | | **SILT** sandy, (ML); dark yellowish brown (10 YR 4/6); very stiff; 70% silt, 25% sand, 5% clay; low to medium plasticity; trace of clay; slightly micaceous; RESIDUUM | |
| 39–40 | | SPT 12 | 10 11 8 | 13/18 | | | | | | **SILT** sandy, (ML) dark yellowish brown (10 YR 4/6); very stiff; 70% silt, 30% sand; low | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-621A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | plasticity; trace clay; slightly micaceous; RESIDUUM | | |
| 41 | | | | | | | | | | **SILT** sandy (ML); red (2.5 YR 5/8); damp; very stiff; 70% silt, 30% sand; no plasticity; RESIDUUM | | |
| 42 | | | | | | | | | | *(Continued from previous page)* | | |
| 43 | | | | | | | | | | **SILT** sandy (ML); black (10 YR 2/1); hard; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 44 | | SPT 13 | 10 28 50/4 | 19/16 | | | | | | | | |
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| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 24 36 19 | 16/18 | | | | | | **SILT** sandy (ML); black (7.5 YR 2.5/1); hard; 70% silt, 30% sand; no plasticity; contains rock fragments; slightly micaceous; RESIDUUM | End of day 4/11/06<br>Begin day 4/12/06 at 8:00 am water at 24.0 ft | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | GP | GRAVEL (GP); Amphibolite schist fragments; black; PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 58.8 ft | | |
| 53 | | | | | | | | | | | | |
| 54 | | SPT 15 | 50/4 | 1/4 | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-621A

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Air Rotary / 6 inch | North of Northern Nuclear Island | | 100 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Nichols/McCall / IR T3W | 421.5 feet | | 58.5 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 3 / 58.5 feet | 420.9 feet | 3 | 5/26/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | B. Sharp | 5/26/06 |

Reviewed by / Date M. Cooke 6/14/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 59–60 | 1 | 1.0/2.5 | 0 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing 1 ft of AMPHIBOLITE SCHIST recovered in core | NOTE: Samples and Lithology Information are from adjacent boring. |
| 61–66 | 2 | 0.5/5.0 | 0 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing thin zone of BIOTITE GNEISS recovered in core | |
| 66–71 | 3 | 2.8/5.0 | 1 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing 2.8 ft of AMPHIBOLITE SCHIST recovered in core | |
| 71–73 | 4 | 3.4/5.0 | 46 | HW | R0 to R3 | | | GRANODIORITE and highly weathered to completely weathered PARTIALLY WEATHERED ROCK or SAPROLITE | |
| 73–76 | | | | F | R4 | | | BIOTITE GNEISS; white and gray; fine to medium grained; foliation at 30° | |
| 76–79 | 5 | 5.0/5.0 | 100 | F | R4 | | | | 30% loss of coring water return |
| 79–81 | | | | | | | | | End of day 4/13/06<br>Begin day 4/14/06 |
| 81–86 | 6 | 5.0/5.0 | 100 | F | R4 | | | | |
| 86–91 | 7 | 4.8/5.0 | 96 | F | R4 | | | MIGMATITE; gneiss with granodiorite and amphibolite schist; black and white to dark gray; fine to coarse grained; pyrite visible | End drilling 4/14/06<br>Begin drilling 4/17/06 at 12:50 pm water at 63 ft |
| 91–96 | 8 | 5.0/5.0 | 100 | F | R4 | | | | End drilling 4/17/06<br>Begin drilling 4/18/06 |
| 96–98 | | 5.0 | | | | | | | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-621A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 9 | 5.0 | 100 | F | R4 | | | BIOTITE GNEISS<br>CORING TERMINATED AT 101.0 ft. | Run #6 recovery taken as 5 ft because 0.5 ft of core left in hole | |
| 100 | | | | | | | | | | |
| 101 | | | | | | | | | Boring terminated at 101.0 ft. on 4/18/06 | |
| 102 | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-621B

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>North of Northern Nuclear Island | Total Depth<br>100 feet |
| Drilling Contractor and Rig (for Well)<br>Nichols/McCall / IR T3W | Elevation at Boring<br>421.5 feet / Ground Water Depth | Depth to Bedrock<br>58.5 feet |
| Sampling Method (Boring)<br>Split Spoon | Elevation at Well<br>421.2 feet / No. of Samples<br>15 | Date Started (Well)<br>5/25/06 |
| | Borehole Inclination<br>0 / Logged by<br>B. Sharp | Date Completed (Well)<br>5/25/06 |

Reviewed by / Date M. Cooke 5/27/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 3 4 4 | 15/18 | | | | | CL-ML | **CLAY** silty, sandy (CL-ML); yellowish red (5 YR 4/6); damp; medium stiff; 50% clay, 30% silt, 20% sand; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum | |
| 2–3 | | SPT 2 | 6 8 9 | 16/18 | | | | | ML | **SILT** sandy (ML); red (2.5 YR 5/8); damp; very stiff; 70% silt, 30% sand; no plasticity; RESIDUUM | | |
| 4–5 | | SPT 3 | 6 7 7 | 15/18 | | | | | | **SILT** sandy (ML); red (2.5 YR 4/6); stiff; 85% silt, 15% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 6–7 | | SPT 4 | 3 3 5 | 14/18 | | | | | | **SILT** (ML); yellowish brown (10 YR 5/4); medium stiff; 90% silt, 10% sand; no plasticity; RESIDUUM | | |
| 9–10 | | SPT 5 | 5 7 8 | 15/18 | | | | | | **SILT** sandy (ML); dark red (2.5 YR 3/6); stiff; 80% silt, 20% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 11–12 | | SPT 6 | 2 3 4 | 16/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 4/6); medium stiff; 85% silt, 15% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 14–15 | | SPT 7 | 2 4 4 | 16.5/18 | | | | | | **SILT** sandy (ML); dark red (2.5 YR 3/6); medium stiff; 75% silt, 25% sand; no plasticity; micaceous; RESIDUUM | | |
| 19–20 | | SPT 8 | 2 3 6 | 18/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 5/8); stiff; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 24–25 | | SPT 9 | 1 2 3 | 16/18 | | | | | | **SILT** sandy (ML); yellowish red (5 YR 4/6); medium stiff; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 29–30 | | SPT 10 | 3 5 8 | 20/18 | | | | | | **SILT** sandy, clayey (ML); yellowish brown (10 YR 5/8); stiff; 70% silt, 30% sand; low to medium plasticity; slightly micaceous; RESIDUUM | | |
| 34–35 | | SPT 11 | 5 9 13 | 19/18 | | | | | | **SILT** sandy, (ML); dark yellowish brown (10 YR 4/6); very stiff; 70% silt, 25% sand, 5% clay; low to medium plasticity; trace of clay; slightly micaceous; RESIDUUM | | |
| 39–40 | | SPT 12 | 10 11 8 | 13/18 | | | | | | **SILT** sandy, (ML) dark yellowish brown (10 YR 4/6); very stiff; 70% silt, 30% sand; low | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

## WELL LOG SOIL - Well No. OW-621B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | plasticity; trace clay; slightly micaceous; RESIDUUM | | |
| 41 | | | | | | | | | | **SILT** sandy (ML); red (2.5 YR 5/8); damp; very stiff; 70% silt, 30% sand; no plasticity; RESIDUUM | | |
| 42 | | | | | | | | | | *(Continued from previous page)* | | |
| 43 | | | | | | | | | | **SILT** sandy (ML); black (10 YR 2/1); hard; 70% silt, 30% sand; no plasticity; slightly micaceous; RESIDUUM | | |
| 44 | | SPT 13 | 10 28 50/4 | 19/16 | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 24 36 19 | 16/18 | | | | | | **SILT** sandy (ML); black (7.5 YR 2.5/1); hard; 70% silt, 30% sand; no plasticity; contains rock fragments; slightly micaceous; RESIDUUM | End of day 4/11/06<br>Begin day 4/12/06 at 8:00 am water at 24.0 ft | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | GP | GRAVEL (GP); Amphibolite schist fragments; black; PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 58.8 ft | | |
| 53 | | | | | | | | | | | | |
| 54 | | SPT 15 | 50/4 | 1/4 | | | | | | | | |
| 55 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-621B

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring<br>Air Rotary / 6 inch | Boring Location<br>North of Northern Nuclear Island | | Total Depth<br>100 feet |
| Drilling Contractor and Rig<br>Nichols/McCall / IR T3W | Elevation at Boring<br>421.5 feet | Ground Water Depth | Depth to Bedrock<br>58.5 feet |
| Casing Size and Depth (Boring)<br>3 / 60.4 feet | Elevation at Well<br>421.2 feet | No. of Core Boxes<br>3 | Date Started<br>5/25/06 |
| | Borehole Inclination<br>0 | Logged by<br>B. Sharp | Date Completed<br>5/25/06 |

Reviewed by / Date M. Cooke 5/27/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 59–61 | 1 | 1.0 / 2.5 | 0 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing 1 ft of AMPHIBOLITE SCHIST recovered in core | NOTE: Samples and Lithology Information are from adjacent boring. | |
| 61–66 | 2 | 0.5 / 5.0 | 0 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing thin zone of BIOTITE GNEISS recovered in core | | |
| 66–71 | 3 | 2.8 / 5.0 | 1 | CW to MW | R0 to R3 | | | Completely weathered zone of PARTIALLY WAETHERED ROCK or SAPROLITE containing 2.8 ft of AMPHIBOLITE SCHIST recovered in core | | |
| 71–73 | 4 | 3.4 / 5.0 | 46 | HW | R0 to R3 | | | GRANODIORITE and highly weathered to completely weathered PARTIALLY WEATHERED ROCK or SAPROLITE | | |
| 73–76 | | | | F | R4 | | | BIOTITE GNEISS; white and gray; fine to medium grained; foliation at 30° | | |
| 76–81 | 5 | 5.0 / 5.0 | 100 | F | R4 | | | | 30% loss of coring water return | |
| 81–86 | 6 | 5.0 / 5.0 | 100 | F | R4 | | | | End of day 4/13/06<br>Begin day 4/14/06 | |
| 86–91 | 7 | 4.8 / 5.0 | 96 | F | R4 | | | MIGMATITE; gneiss with granodiorite and amphibolite schist; black and white to dark gray; fine to coarse grained; pyrite visible | End drilling 4/14/06<br>Begin drilling 4/17/06 at 12:50 pm water at 63 ft | |
| 91–96 | 8 | 5.0 / 5.0 | 100 | F | R4 | | | | End drilling 4/17/06<br>Begin drilling 4/18/06 | |
| 96–98 | | 5.0 | | | | | | | | |

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-621B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 9 | 5.0 | 100 | F | R4 | | | BIOTITE GNEISS<br>CORING TERMINATED AT 101.0 ft. | Run #6 recovery taken as 5 ft because 0.5 ft of core left in hole | |
| 100 | | | | | | | | | | |
| 101 | | | | | | | | | Boring terminated at 101.0 ft. on 4/18/06 | |
| 102 | | | | | | | | | | |
| 103 | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-622

Lithologic and Sampling Information from adjacent companion boring.

| | | | |
|---|---|---|---|
| Type and Diameter of Boring (for Well)<br>Air Rotary / 6 inch | Boring Location<br>North of Northern Nuclear Island | | Total Depth<br>70 feet |
| Drilling Contractor and Rig (for Well)<br>Nichols/McCall / IR T3W | Elevation at Boring<br>437.7 feet | Ground Water Depth | Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>438.1 feet | No. of Samples<br>14 | Date Started (Well)<br>5/25/06 |
| | Borehole Inclination<br>0 | Logged by<br>M. Cooke | Date Completed (Well)<br>5/25/06 |

Reviewed by / Date M. Cooke 5/25/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 4 8 8 | 14/18 | | | | | ML | **SILT** sandy (ML); (2.5 YR 5/8); moist; very stiff; 70% silt, 30% sand; low plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 6 7 8 | 16/18 | | | | | | SAA; stiff | |
| 4–5 | | SPT 3 | 5 5 7 | 18/18 | | | | | | SAA; stiff | |
| 6–7 | | SPT 4 | 5 7 9 | 18/18 | | | | | SM | **SAND** silty (SM); (7.5 YR 6/8); damp to moist; medium dense; 60% sand, 40% silt; poorly graded RESIDUUM | |
| 9–10 | | SPT 5 | 2 4 5 | 18/18 | | | | | ML | SILT sandy (ML); (2.5 YR 5/8); damp to moist; medium stiff; 65% silt; 35% sand; low plasticity; RESIDUUM | |
| 11–12 | | SPT 6 | 2 5 6 | 18/18 | | | | | SM | **SAND** silty (SM); (7.5 YR 6/8); damp to moist; medium dense; 60% sand, 40% silt; RESIDUUM | |
| 14–15 | | SPT 7 | 3 5 7 | 18/18 | | | | | | **SAND** silty (SM); (10 YR 5/6); damp to moist; medium dense; 55% sand, 45% silt; very micaceous; RESIDUUM | |
| 19–20 | | SPT 8 | 3 4 5 | 18/18 | | | | | | **SAND** silty (SM); (10 YR 6/4); damp to moist; loose; 75% sand; 25% silt; RESIDUUM | |
| 24–25 | | SPT 9 | 5 7 7 | 18/18 | | | | | | SAA; except medium dense; RESIDUUM | |
| | | | | | | | | | | | Medium stiff to hard |
| 29–30 | | SPT 10 | 3 5 5 | 18/18 | | | | | SM | **SAND** silty (SM); (10 YR 7/4 to 10 YR 5/4); moist; loose; 70% sand, 30% silt; micaceous; SAPROLITE | Saprolite |
| 33–34 | | SPT 11 | 4 7 50/5 | 18/17 | | | | | ML | **SILT** sandy (ML); 7.5 YR 4/6; moist; medium stiff to hard; 60% silt, 40% sand; low plasticity; SAPROLITE | |
| 35–36 | | | | | | | | | ML | **SILT** sandy (ML); PARTIALLY WEATHERED ROCK | Hard ledges and lenses from 35 to 38.5 ft |
| 39–40 | | SPT 12 | 13 18 32 | 18/18 | | | | | SM | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-622

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | **SAND** silty (SM); 10 YR 3/1; moist; very dense; 80% sand, 20% silt; contains <1/2 diameter gravel size rock fragments that could not be broken down by SPT; SAPROLITE *(Continued from previous page)* | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | Hard drilling from 42 to 45 ft | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 50/1.5 | 1.5 / 1.5 | | | | | | **SAND** silty (SM); 10 YR 8/1; moist; 85% sand; 15% silt; PARTIALLY WEATHERED ROCK | | |
| 45 | | SPT 14 | 50/0 | 0 / 0 | | | | | | BORING TERMINATED AT 45.0 ft. | Auger refusal at 45 ft. on 4/6/06 water at 44.4 ft 4/7/06 water level at 44 ft | |
| 46 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-623

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: Northeast of Nuclear Island | Total Depth: 90 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Fraste Multidrill XL | Elevation at Boring: 439.6 feet | Ground Water Depth / Depth to Bedrock |
| Sampling Method (Boring): Standard | Elevation at Well: 439.6 feet | No. of Samples: 19 / Date Started (Well): 5/25/06 |
| | Borehole Inclination: 0 | Logged by: C. Bruce / Date Completed (Well): 5/26/06 |

Reviewed by / Date: M. Cooke 6/14/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 2 3 5 | 8/18 | | | | | ML | **SILT** sandy (ML); dark reddish brown (5 YR 3/4); dry; medium stiff; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 5 6 7 | 12/18 | | | | | | **SILT** sandy (ML); dark reddish brown (2.5 YR 2.5/3); dry; stiff | |
| 4–5 | | SPT 3 | 5 8 16 | 15/18 | | | | | | **SILT** sandy (ML); dark reddish brown (2.5 YR 2.5/4); dry; very stiff | |
| 6–7 | | SPT 4 | 9 13 17 | 18/18 | | | | | | **SILT** (ML); red (10 R 3/6); dry; hard | |
| 9–10 | | SPT 5 | 11 17 26 | 18/18 | | | | | | **SILT** (ML); red (10 R 3/6); dry; hard | |
| 11–12 | | SPT 6 | 11 13 17 | 18/18 | | | | | | **SILT** (ML); red (10 R 4/6); dry; hard | |
| 14–15 | | SPT 7 | 11 16 18 | 18/18 | | | | | | SAA; damp | |
| 19–20 | | SPT 8 | 4 7 12 | 18/18 | | | | | | **SILT** sandy (ML); reddish yellow (5 YR 6/8); damp; very stiff | |
| 24–25 | | SPT 9 | 4 7 9 | 18/18 | | | | | | **SILT** (ML); red (2.5 YR 4/6); dry; very stiff; trace mica | |
| 29–30 | | SPT 10 | 7 9 7 | 18/18 | | | | | ML | SILT (ML); yellowish red (5 YR 4/6); very stiff; SAPROLITE contains sand lenses 28.5 to 28.7 ft and 29.5 to 30 ft; SAPROLITE | Saprolite |
| 34–35 | | SPT 11 | 3 3 6 | 18/18 | | | | | | **SILT** sandy (ML); red (2.5 YR 4/6); dry to damp; stiff; with black veins; micaceous; SAPROLITE | |
| 39–40 | | SPT 12 | 5 6 7 | 18/18 | | | | | | **SILT** sandy (ML); red and orange with black veins; dry; stiff | |

WELL

Project Name : Job Number

MACTEC

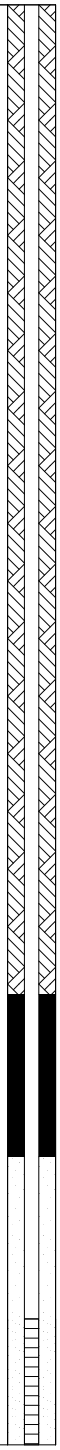
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-623

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | SILT (ML); yellowish red (5 YR 4/6); very stiff; SAPROLITE contains sand lenses 28.5 to 28.7 ft and 29.5 to 30 ft; SAPROLITE *(Continued from previous page)* | |
| 44–45 | | SPT 13 | 7 7 13 | 17/18 | | | | | | **SILT** sandy (ML) with lense of SAND (SM); (10 YR 6/4) 44.5 to 45 ft | |
| 46–48 | | | | | | | | | | | |
| 49–50 | | SPT 14 | 17 16 17 | 18/18 | | | | | | **SILT** (ML); yellowish brown (10 YR 5/8); dry; hard | |
| 51–53 | | | | | | | | | | | |
| 54–55 | | SPT 15 | 7 9 15 | 18/18 | | | | | | **SILT** sandy (ML); brown (7.5 YR 5/8); dry; very stiff; vein of very pale olive; micaceous; black veins | |
| 56–58 | | | | | | | | | | | |
| 59–60 | | SPT 16 | 7 11 22 | 18/18 | | | | | | SAA | |
| 61–63 | | | | | | | | | | | |
| 64–65 | | SPT 17 | 8 7 10 | 18/18 | | | | | | **SILT** sandy (ML); brown (7.5 YR 5/8); micaceous | |
| 65–68 | | | | | | | | | SM | SAND silty (SM); white; micaceous | Difficult slow drilling progress |
| 69–73 | | SPT 18 | 10 50/5.5 | 6/11.5 | | | | | SM | SAND silty (SM); (1.4/N); rock chips encountered; PARTIALLY WEATHERED ROCK<br>Auger refusal at 73.9 ft boring terminated | End drilling 4/6/06 no water<br>Resume 4/7/06 at 8:30 am no water<br>Difficult drilling scraping<br>Water encountered at 71.6 ft |
| 74–80 | | SPT 19 | 50/1 | 1/1 | | | | | | | Auger refusal at 73.9 ft. on 4/7/06; waeter at 71.6 ft |

WELL



Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

**WELL LOG SOIL - Well No. OW-623**

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-624

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: East of Nuclear Island | Total Depth: 70 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Fraste Multidrill XL | Elevation at Boring: 359 feet | Ground Water Depth / Depth to Bedrock |
| Sampling Method (Boring): Standard | Elevation at Well: 359.3 feet | No. of Samples: 10 / Date Started (Well): 5/24/06 |
| | Borehole Inclination: 0 | Logged by: C. Bruce / Date Completed (Well): 5/24/06 |

Reviewed by / Date: M. Cooke 6/14/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 1 2 5 | 12/18 | | | | | SM | **SAND** silty (SM); dark yellowish brown (10 YR 4/6); dry; loose; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 1–3 | | SPT 2 | 4 9 19 | 13/18 | | | | | | **SAND** (SM); black and brown (7.5 YR 4/6 and 5 YR 2.5/1); dry; medium dense; trace silt | |
| 3–5 | | SPT 3 | 21 30 35 | 18/18 | | | | | SM | **SAND** (SM); yellowish brown (10 YR 4/4); dry; medium dense; well graded with traces of gravel and trace fines | |
| 5–7 | | SPT 4 | 20 50/4 | 8/10 | | | | | SM | **SAND** (SM); very dark gray (2.5 Y 3/1); dry; fine sand; trace silt; some gravel; PARTIALLY WEATHERED ROCK | Difficult drilling<br>Difficult drilling<br>Partially weathered rock 5.5 to 8.0 ft |
| 7–10 | | SPT 5 | 30 31 45 | 13/18 | | | | | SM | **SAND** (SM); very dark gray (10 YR 3/1); dry; dense; fine sand; gravel | Saprolite 8.0 to 10.5 ft. |
| 10–12 | | SPT 6 | 50/5.5 | 5.5/5.5 | | | | | SM | **SAND** (SM); greenish black (10 GY) fine with gravel, coarse sand, rock pieces; PARTIALLY WEATHERED ROCK | Difficult drilling<br>Partially weathered rock at 10.5 ft |
| 12–15 | | SPT 7 | 27 50/6 | 10/12 | | | | | | **SAND** (SM); dry; dense; brown and greenish black with gravel; fine sand; trace silt; PARTIALLY WEATHERED ROCK | Auger scraping |
| 15–19 | | SPT 8 | 50/2.4 | 2/2.4 | | | | | | **SAND** silty (SM) brown (10 YR 5/3); dry; very dense; fine to medium sand with gravel; PARTIALLY WEATHERED ROCK | |
| 19–24 | | SPT 9 | 50/4 | 2/4 | | | | | | **SAND** (SM); greenish black (10 GY); fine to gravel; trace silt; PARTIALLY WEATHERED ROCK | |
| 24–29 | | SPT 10 | 50/6 | 5/6 | | | | | | SAND silty (SM); fine to gravel; PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 31.6 ft. | |
| 29–40 | | | | | | | | | | | Auger refusal at 31.6 ft on 4/10/06; no water |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-624

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | | | |
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Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-625

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Hollow Stem Auger / 6.25 inch | Boring Location: East of Cooling Tower Area | Total Depth: 108 feet |
| Drilling Contractor and Rig (for Well): Poole/Gregg / Rhino | Elevation at Boring: 404.2 feet | Ground Water Depth: |
| | | Depth to Bedrock: |
| Sampling Method (Boring): Standard | Elevation at Well: 403.2 feet | No. of Samples: 26 |
| | | Date Started (Well): 5/8/06 |
| | Borehole Inclination: 0 | Logged by: C. Bruce |
| | | Date Completed (Well): 5/23/06 |

Reviewed by / Date: M. Cooke 6/14/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 1 2 5 | 10/18 | | | | | ML | **SILT** (ML); dusky red (2.5 YR 3/6); dry; medium stiff; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 5 6 10 | 2/18 | | | | | | SAA; very stiff | |
| 3–4 | | SPT 3 | 7 9 13 | 16/18 | | | | | | SAA | |
| 5–6 | | SPT 4 | 14 24 28 | 18/18 | | | | | ML | **SILT** (ML); dusky red (2.5 YR 3/6); and strong brown (7.5 YR 5/8); dry; hard; mottled | |
| 8–9 | | SPT 5 | 11 15 19 | 18/18 | | | | | | **SILT** (ML); red (2.5 YR 4/8); dry; very stiff | |
| 10–11 | | SPT 6 | 9 11 11 | 18/18 | | | | | | SAA; very stiff | |
| 13–14 | | SPT 7 | 5 8 9 | 18/18 | | | | | | SAA; very stiff | |
| 19–20 | | SPT 8 | 4 5 7 | 18/18 | | | | | | **SILT** (ML); orange at top of the interval white fine sand at base (10 YR 6/8); brownish yellow from 19.5 to 20 ft; white sand at 20 ft; stiff | Sand interval 19.5 to 20 ft |
| 24–25 | | SPT 9 | 3 4 5 | 18/18 | | | | | | **SILT** (ML); brown (7.5 YR 5/8); dry; stiff; micaceous; trace fine sand | |
| 29–30 | | SPT 10 | 4 6 7 | 18/18 | | | | | | **SILT** (ML); brown (7.5 YR 5/8); medium stiff; micaceous; trace fine sand | |
| 34–35 | | SPT 11 | 4 6 8 | 18/18 | | | | | ML | **SILT** (ML); tan and brown; damp; stiff; mottled with black banding; ferns or manganese; SAPROLITE | Saprolite |
| 39–40 | | SPT 12 | 3 4 6 | 18/18 | | | | | | SAA | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-625

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40–43 | | | | | | | | | | **SILT** (ML); tan and brown; damp; stiff; mottled with black banding; ferns or manganese; SAPROLITE *(Continued from previous page)* | | |
| 44–45 | | SPT 13 | 4 7 8 | 18/18 | | | | | | **SILT** sandy (ML); pale yellow (2.5 Y 8/2); with black specks damp; medium stiff; with trace gravel; SAPROLITE | | |
| 46–47 | | | | | | | | | | | | |
| 48–50 | | SPT 14 | 16 11 12 | 18/18 | | | | | SP-SM | **SAND** (SM-SP); white (2.5 Y 8/1); dry; medium dense; fine sand; gravely | Harder drilling 47 ft | |
| 51–53 | | | | | | | | | SM | **SAND** (SM); pale yellow (2.5 Y 8/3); dry; medium dense; micaceous; trace silt | | |
| 54–55 | | SPT 15 | 4 7 8 | 18/18 | | | | | | | | |
| 56–58 | | | | | | | | | ML | **SILT** sandy (ML); olive (5 Y 5/4); dry; medium dense; micaceous; very stiff | | |
| 59–60 | | SPT 16 | 6 8 10 | 18/18 | | | | | | | | |
| 61–63 | | | | | | | | | | | | |
| 64–65 | | SPT 17 | 5 7 10 | 18/18 | | | | | | **SILT** (ML); strong brown (7.5 YR 5/8); black vein; dry; stiff; micaceous; SAPROLITE | Sample not as sandy and no gravel 63.5, 68.5 and 73.5 ft | |
| 66–68 | | | | | | | | | | | | |
| 69–70 | | SPT 18 | 5 8 11 | 18/18 | | | | | | SAA; grading down to pale brown (10 YR 8/3); damp; very stiff | | |
| 71–73 | | | | | | | | | | | | |
| 74–75 | | SPT 19 | 6 9 10 | 18/18 | | | | | | **SILT** (ML); strong brown (7.5 YR 5/8); black vein; very stiff;; micaceous; trace fine sand; SAPROLITE | | |
| 76–78 | | | | | | | | | | | | |
| 79–80 | | SPT 20 | 8 11 15 | 18 | | | | | | **SILT** sandy (ML); reddish yellow (7.5 YR 7/8); damp to dry; very stiff; micaceous; | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-625

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | SAPROLITE<br>**SILT** sandy (ML); olive (5 Y 5/4); dry; medium dense; micaceous; very stiff<br>*(Continued from previous page)* | | |
| 81 | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | |
| 83 | | | | | | | | | | | | |
| 84 | | SPT 21 | 4 8 10 | 18 | | | | | ML | **SILT** (ML); reddish yellow (7.5 YR 6/8); damp; very stiff; micaceous; black veins; SAPROLITE | | |
| 85 | | | | | | | | | | | | |
| 86 | | | | | | | | | | | | |
| 87 | | | | | | | | | SM | **SAND** silty (SM); 7.5 YR 8/1.5); damp; medium dense; very fine; very micaceous; black vein | | |
| 88 | | | | | | | | | | | | |
| 89 | | SPT 22 | 8 10 16 | 18 | | | | | | | | |
| 90 | | | | | | | | | | | | |
| 91 | | | | | | | | | | | | |
| 92 | | | | | | | | | | | | |
| 93 | | | | | | | | | | | | |
| 94 | | SPT 23 | 7 10 14 | 18/18 | | | | | | | | |
| 95 | | | | | | | | | | **SAND** silty (SM); white (7.5 YR 8/1); damp; medium dense; very fine; micaceous | | |
| 96 | | | | | | | | | | | | |
| 97 | | | | | | | | | ML | **SILT** (ML); yellowish brown (10 YR 8/6); hard; micaceous; black veins; color change to very pale brown (10 YR 8/2) at 99.6 ft; SAPROLITE | | |
| 98 | | | | | | | | | | | | |
| 99 | | SPT 24 | 11 19 24 | 15/18 | | | | | | | End of day 4/4/06 water level at 88.4<br>Begin day 4/5/06; water at 86.8 ft | |
| 100 | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | |
| 104 | | SPT 25 | 8 14 19 | 16/18 | | | | | ML | **SILT** sandy (ML); very pale brown (10 YR 8/6); and brown of various shades; medium dense; black vein; micaceous; SAPROLITE | | |
| 105 | | | | | | | | | | | | |
| 106 | | | | | | | | | | | | |
| 107 | | | | | | | | | | | | |
| 108 | | | | | | | | | | | | |
| 109 | | SPT 26 | 47 50/1 | 7/7 | | | | | SM | **SAND** silty (SM); black and white with brown orange staining; damp to dry; dense; fine to medium sand; PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 110.0 ft | Auger refusal at 110 ft on 4/5/06; water level at 98.4 ft | |
| 110 | | | | | | | | | | | | |
| 111 | | | | | | | | | | | | |
| 112 | | | | | | | | | | | | |
| 113 | | | | | | | | | | | | |
| 114 | | | | | | | | | | | | |
| 115 | | | | | | | | | | | | |
| 116 | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | |
| 118 | | | | | | | | | | | | |
| 119 | | | | | | | | | | | | |
| 120 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-626

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Mud Rotary / 6 inch | Boring Location<br>Existing Access Road | Total Depth<br>85 feet |
| Drilling Contractor and Rig (for Well)<br>Smith/Gregg / Fraste Multidrill XL | Elevation at Boring<br>417.2 feet | Ground Water Depth / Depth to Bedrock |
| Sampling Method (Boring)<br>Standard | Elevation at Well<br>416.4 feet | No. of Samples<br>25 / Date Started (Well)<br>4/28/06 |
| | Borehole Inclination<br>0 | Logged by<br>C. Bruce / Date Completed (Well)<br>4/29/06 |

Reviewed by / Date M. Cooke 5/8/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 3 4 6 | 14/18 | | | | | CL-ML | **CLAY** silty (CL-ML); (10 R 4/8); moist; stiff to very stiff; 45% clay; 45% silt; 10% sand; low to medium plasticity; RESIDUUM | NOTE: Samples and Lithology Information are from adjacent boring. Residuum |
| 2–3 | | SPT 2 | 3 7 8 | 18/18 | | | | | | | |
| 4–5 | | SPT 3 | 4 7 10 | 16/18 | | | | | | | |
| 6–7 | | SPT 4 | 3 6 9 | 18/18 | | | | | ML | **SILT** sandy (ML); (10 R 4/8 to 10 R 5/8); moist; stiff; 75% silt, 25% sand; low plasticity; RESIDUUM | |
| 9–10 | | SPT 5 | 3 4 7 | 18/18 | | | | | | | |
| 12–13 | | SPT 6 | 3 4 6 | 16/18 | | | | | ML | **SILT** sandy (ML); (5 YR 5/8 to 10 YR 6/6); damp to moist; stiff; 55% silt, 45% sand; slightly micaceous; SAPROLITE | Saprolite |
| 14–15 | | SPT 7 | 3 4 5 | 18/18 | | | | | ML | SAA | |
| 19–20 | | SPT 8 | 3 4 6 | 18/18 | | | | | | SAA | |
| 24–25 | | SPT 9 | 3 4 6 | 18/18 | | | | | SM | **SAND** silty (SM); (10 YR 7/8 to 10 YR 5/8 to 10 YR 4/6); moist to wet; loose; 55% sand, 45% silt; slightly to very micaceous; SAPROLITE | |
| 29–30 | | SPT 10 | 4 7 7 | 18/18 | | | | | | SAA; medium dense | |
| 32–33 | | | | | | | | | | | Hard zone |
| 34–35 | | SPT 11 | 3 5 7 | 18/18 | | | | | | SAA; medium dense | |
| 39–40 | | SPT 12 | 2 3 6 | 18/18 | | | | | | SAA; medium dense | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-626

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | **SAND** silty (SM); (10 YR 7/8 to 10 YR 5/8 to 10 YR 4/6); moist to wet; loose; 55% sand, 45% silt; slightly to very micaceous; SAPROLITE *(Continued from previous page)* | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 3 6 7 | 18/18 | | | | | | SAA; medium dense | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 3 5 7 | 18/18 | | | | | | SAA; medium dense | | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | |
| 54 | | SPT 15 | 4 6 9 | 18/18 | | | | | | SAA; medium dense; wet | | |
| 55 | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | |
| 59 | | SPT 16 | 4 7 10 | 18/18 | | | | | | SAA; medium dense | | |
| 60 | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | |
| 62 | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | |
| 64 | | SPT 17 | 5 9 14 | 18/18 | | | | | | SAA except 10 YR 6/4 | | |
| 65 | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | |
| 67 | | | | | | | | | | | | |
| 68 | | | | | | | | | | | | |
| 69 | | SPT 18 | 5 10 14 | 18/18 | | | | | | SAA 10 YR 6/4 | | |
| 70 | | | | | | | | | | | | |
| 71 | | | | | | | | | | | End day 4/4/06; water at 61 ft<br>Begin day 4/5/06; water at 50.4 ft | |
| 72 | | | | | | | | | | | | |
| 73 | | | | | | | | | | | | |
| 74 | | SPT 19 | 2 11 18 | 18/18 | | | | | | **SAND** silty (SM); (10 YR 6/8); moist to wet; medium dense; 65% sand; 35% silt; micaceous; SAPROLITE | | |
| 75 | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | |
| 77 | | | | | | | | | | | | |
| 78 | | | | | | | | | | | | |
| 79 | | SPT 20 | 15 23 31 | 18/18 | | | | | | **SAND** silty (SM); (10 YR 4/1 to 10 YR 7/1); moist; very dense; 65% sand; 35% silt; slightly | | |
| 80 | | | | | | | | | | | | |

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-626

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80–83 | | | | | | | | | | micaceous; SAPROLITE<br>**SAND** silty (SM); (10 YR 7/8 to 10 YR 5/8 to 10 YR 4/6); moist to wet; loose; 55% sand, 45% silt; slightly to very micaceous; SAPROLITE<br>*(Continued from previous page)*<br>**SAND** silty (SM); (10 YR 6/6); moist; dense; 75% sand, 25% silt; slightly micaceous; SAPROLITE | | |
| 84–85 | | SPT 21 | 6 18 24 | 18/18 | | | | | | | | |
| 88–89 | | SPT 22 | 26 50/4.5 | 10/10.5 | | | | | SM | **SAND** silty (SM); (5 YR 5/8); moist; 80% sand, 20% silt; PARTIALLY WEATHERED ROCK | | |
| 93–95 | | SPT 23 | 11 28 38 | 9/18 | | | | | SM | **SAND** silty (SM); (2.5 Y 8/1); moist; very dense; 80% sand; 20% silt; SAPROLITE | | |
| 98–100 | | SPT 24 | 33 50/6 | 10/12 | | | | | ML | **SILT** (ML) sandy (5 Y 4/1); moist; 55% silt, 45% sand; non plasticity; very micaceous; PARTIALLY WEATHERED ROCK | | |
| 102–104 | | SPT 25 | 50/1.5 | 1.5/1.5 | | | | | SM | **SAND** silty (SM); (10 YR 4/1); 75% sand, 25% silt; PARTIALLY WEATHERED ROCK<br>BORING TERMINATED AT 103.6 ft. | Refusal ta 103.6 ft. on 4/5/06; water at 55.5 ft 4/6/06; water at 54.3 ft | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-627A

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well): Air Rotary / 6 inch | Boring Location: South of Nuclear Island | Total Depth: 100 feet |
| Drilling Contractor and Rig (for Well): Smith/Gregg / Fraste Multidrill XL | Elevation at Boring: 326.3 feet; Ground Water Depth | Depth to Bedrock: 57.5 feet |
| Sampling Method (Boring): Standard | Elevation at Well: 327.6 feet; No. of Samples: 15 | Date Started (Well): 6/6/06 |
| | Borehole Inclination: 0; Logged by: C. Bruce | Date Completed (Well): 6/7/06 |

Reviewed by / Date: M. Cooke 6/14/06
Reviewed by / Date: CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 4 7 8 | 12/18 | | | | | CL | **CLAY** sandy (CL); red (2.5 YR 4/6); moist; stiff; 70% clay; 30% sand; low to medium plasticity; contains small sized roots; FILL | NOTE: Samples and Lithology Information are from adjacent boring. Fill |
| 2–3 | | SPT 2 | 1 1 1 | 12/18 | | | | | SC | **SAND** clayey (SC); pinkish gray (7.5 YR 7/2); moist; very loose; 60% sand; 40% clay; ALLUVIUM | Top of alluvium |
| 4–5 | | SPT 3 | 1 3 6 | 12/18 | | | | | | SAA; except loose; ALLUVIUM | |
| 6–7 | | SPT 4 | 1 3 7 | 4/18 | | | | | | SAA; loose | |
| 9–10 | | SPT 5 | 14 13 12 | 18/18 | | | | | | SAA; except medium dense; ALLUVIUM | |
| 11–12 | | SPT 6 | 3 7 7 | 18/18 | | | | | | **SAND** clayey (SC); gray to brownish yellow (10 YR 5/1 to 10 YR 6/6); moist; medium dense; 70% sand, 30% clay; ALLUVIUM | End of day 4/11/06; water at 0 ft<br>Begin day 4/12/06; water at 0 ft |
| 14–15 | | SPT 7 | 4 4 3 | 12/18 | | | | | | SAA; except light gray (10 YR 7/2); and loose; ALLUVIUM | |
| 17–18 | | | | | | | | | SM | **SAND** silty (SM); dark yellowish brown (10 YR 3/6); moist; very dense; 70% sand; 30% silt; SAPROLITE | Bottom of alluvium, top of saprolite |
| 19–20 | | SPT 8 | 13 28 38 | 14/18 | | | | | | | |
| 22–23 | | | | | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 3/6); moist; very stiff; 60% silt, 40% sand; no to low plasticity; SAPROLITE | |
| 24–25 | | SPT 9 | 4 8 10 | 12/18 | | | | | | | |
| 28–29 | | SPT 10 | 5 5 11 | 18/18 | | | | | | SAA; except micaceous; SAPROLITE | 100% water loss |
| 32–33 | | | | | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 65% sand, 35% silt; micaceous; SAPROLITE | |
| 34–35 | | SPT 11 | 20 50/4 | 10/10 | | | | | | | Continued to loose 100% circulation from 35 to 38.5 ft |
| 37–38 | | | | | | | | | ML | **SILT** sandy (ML); strong brown (7.5 YR 4/6); moist; hard; 55% silt, 45% sand; low plasticity; SAPROLITE | |
| 39–40 | | SPT 12 | 12 17 38 | 18/18 | | | | | | | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-627A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 60% sand, 40% silt; slightly micaceous; SAPROLITE | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 33 27 50/5 | 13/17 | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | Top of Partially weathered rock; very hard drilling from 46 to 47 ft | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 50/4 | 4/4 | | | | | | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 65% sand, 35% silt;slightly micaceous; PARTIALLY WEATHERED ROCK | End day 4/12/06 water at 0 ft. | |
| 50 | | | | | | | | | | | Begin day 4/13/06 water at 12 ft | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | End of day on 4/13/06; water at 5 ft | |
| 53 | | | | | | | | | | | Begin day on 4/17/06 water at 27.5 ft | |
| 54 | | SPT 15 | 50/4 | 4/4 | | | | | | **SAND** silty (SM); yellowish brown (10 YR 5/4); moist; very dense; 75% sand, 25% silt; micaceous; PARTIALLY WEATHERED ROCK BORING TERMINATED AT 57.5 ft | | |
| 55 | | | | | | | | | | | End day 4/17/06 water at 27 ft | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | Begin day 4/18/06 water at 27 ft | |
| 58 | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | |
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| 79 | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-627A

Lithologic and Sampling Information from adjacent companion boring.

| Type and Diameter of Boring | Boring Location | | Total Depth |
|---|---|---|---|
| Air Rotary / 6 inch | South of Nuclear Island | | 100 feet |
| **Drilling Contractor and Rig** | **Elevation at Boring** | **Ground Water Depth** | **Depth to Bedrock** |
| Smith/Gregg / Fraste Multidrill XL | 326.3 feet | | 57.5 feet |
| **Casing Size and Depth (Boring)** | **Elevation at Well** | **No. of Core Boxes** | **Date Started** |
| 4 / 57.5 feet | 327.6 feet | 3 | 6/6/06 |
| | **Borehole Inclination** | **Logged by** | **Date Completed** |
| | 0 | C. Bruce | 6/7/06 |

Reviewed by / Date M. Cooke 6/14/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 58–59 | 1 | 1.0 / 1.0 | 0 | RS to CW | R0 to R2 | | | GRANODIORITE; white to black (10 YR 8/1 to 2/1); coarse grained; quartz, feldspar, hornblende, biotite | Tricone refusal at 57.5 ft on 4/18/06 see rock log |
| 59–61 | 2 | 2.7 / 2.7 | 100 | SW | R3 | | | GRANODIORITE | NOTE: Samples and Lithology Information are from adjacent boring. Top of sound rock |
| 62–66 | 3 | 5.0 / 5.0 | 100 | F | R3 to R4 | | | GRANODIORITE | End day 4/18/06 water at 0 ft Begin day 4/19/06 water at 12 ft |
| 67–71 | 4 | 5.0 / 5.0 | 100 | F | R3 to R4 | | | SAA; except fine grained from 70.3 to 71.9 ft. | |
| 72–76 | 5 | 5.0 / 5.0 | 100 | F | R3 to R4 | | | GRANODIORITE | |
| 77–78 | 6 | 2.1 / 2.1 | 100 | F | R3 to R4 | | | | |
| 79–80 | 7 | 1.6 / 1.6 | 100 | F | R3 to R4 | | | | |
| 80–81 | 8 | 1.3 / 1.3 | 100 | F | R3 to R4 | | | | |
| 82–86 | 9 | 5.0 / 5.0 | 100 | F | R3 to R4 | | | | End day 4/19/06 water at 0 ft Begin day 4/20/06 water at 19 ft |
| 84–86 | | | | | | | | QUARTZ MONZONITE; light gray (10 YR 7/1); fine grained; quartz, feldspar, hornblende, biotite | |
| 86–87 | | | | | | | | GRANODIORITE; light gray (10 R 7/1); fine grained; quartz, feldspar, biotite | End day 4/20/06 water at 0 ft Begin day 4/24/06 water at 34.2 ft |
| 87–89 | 10 | 5.0 / 5.0 | 87 | F | R2 to R3 | | | QUARTZ MONZONITE; light gray (10 YR 7/1); fine grained; quartz, feldspar, hornblende, biotite | |
| 90–91 | | | | | R3 to R4 | | | GRANODIORITE; white to black (10 YR 8/1 to 2/1); coarse grained; quartz; feldspar; hornblende; biotite CORING TERMINATED AT 101.5 ft. | |
| 92–96 | 11 | 5.0 / 5.0 | 95 | F | R3 to R4 | | | | NOTE: Unslotted sump section occupies last 0.5 ft of screen length as shown |
| 97 | 12 | 2.0 | 100 | F | R3 to | | | | |

WELL

See page 2 for abbreviations of terms related to weathering, strength, and discontinuities.

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG ROCK - WELL No. OW-627A

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Run No. | Recovery / Cut | % RQD | Weathering | Strength | In-Situ Testing | Lithology | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|
| 98 | | 2.0 | | | R4 | | | | | |
| 99 | 13 | 3.0 / 3.0 | 100 | F | R3 to R4 | | | | End day 4/24/06 water at 0 ft<br>Begin day 4/25/06 water at 31.4 ft<br>6 inches cored left in hole counted in run #13 recovery<br>Boring terminated at 101.5 ft<br>water at 0 ft on 4/25/06 | |
| 100 | | | | | | | | | | |
| 101 | | | | | | | | | | |
| 102 | | | | | | | | | | |
| 103 | | | | | | | | | | |
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| 135 | | | | | | | | | | |
| 136 | | | | | | | | | | |
| 137 | | | | | | | | | | |

Project Name : Job Number
MACTEC
SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-627B

Lithologic and Sampling Information from adjacent companion boring.

| | | |
|---|---|---|
| Type and Diameter of Boring (for Well)<br>Hollow Stem Auger / 6.25 inch | Boring Location<br>South of Nuclear Island | Total Depth<br>100 feet |
| Drilling Contractor and Rig (for Well)<br>Poole/Gregg / Rhino | Elevation at Boring<br>326.3 feet / Ground Water Depth | Depth to Bedrock<br>57.5 feet |
| Sampling Method (Boring)<br>Split Spoon | Elevation at Well<br>326.9 feet / No. of Samples<br>15 | Date Started (Well)<br>5/22/06 |
| | Borehole Inclination<br>0 / Logged by<br>C. Bruce | Date Completed (Well)<br>5/22/06 |

Reviewed by / Date M. Cooke 6/14/06
Reviewed by / Date CES 1/26/07

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0–1 | | SPT 1 | 4 7 8 | 12/18 | | | | | CL | **CLAY** sandy (CL); red (2.5 YR 4/6); moist; stiff; 70% clay; 30% sand; low to medium plasticity; contains small sized roots; FILL | NOTE: Samples and Lithology Information are from adjacent boring. Fill |
| 2–3 | | SPT 2 | 1 1 1 | 12/18 | | | | | SC | **SAND** clayey (SC); pinkish gray (7.5 YR 7/2); moist; very loose; 60% sand; 40% clay; ALLUVIUM | Top of alluvium |
| 4–5 | | SPT 3 | 1 3 6 | 12/18 | | | | | | SAA; except loose; ALLUVIUM | |
| 6–7 | | SPT 4 | 1 3 7 | 4/18 | | | | | | SAA; loose | |
| 9–10 | | SPT 5 | 14 13 12 | 18/18 | | | | | | SAA; except medium dense; ALLUVIUM | |
| 11–12 | | SPT 6 | 3 7 7 | 18/18 | | | | | | **SAND** clayey (SC); gray to brownish yellow (10 YR 5/1 to 10 YR 6/6); moist; medium dense; 70% sand, 30% clay; ALLUVIUM | End of day 4/11/06; water at 0 ft<br>Begin day 4/12/06; water at 0 ft |
| 14–15 | | SPT 7 | 4 4 3 | 12/18 | | | | | | SAA; except light gray (10 YR 7/2); and loose; ALLUVIUM | |
| 18–19 | | SPT 8 | 13 28 38 | 14/18 | | | | | SM | **SAND** silty (SM); dark yellowish brown (10 YR 3/6); moist; very dense; 70% sand; 30% silt; SAPROLITE | Bottom of alluvium, top of saprolite |
| 24–25 | | SPT 9 | 4 8 10 | 12/18 | | | | | ML | **SILT** sandy (ML); dark yellowish brown (10 YR 3/6); moist; very stiff; 60% silt, 40% sand; no to low plasticity; SAPROLITE | |
| 29–30 | | SPT 10 | 5 5 11 | 18/18 | | | | | | SAA; except micaceous; SAPROLITE | 100% water loss |
| 34–35 | | SPT 11 | 20 50/4 | 10/10 | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 65% sand, 35% silt; micaceous; SAPROLITE | Continued to loose 100% circulation from 35 to 38.5 ft |
| 38–39 | | SPT 12 | 12 17 38 | 18/18 | | | | | ML | **SILT** sandy (ML); strong brown (7.5 YR 4/6); moist; hard; 55% silt, 45% sand; low plasticity; SAPROLITE | |

WELL

Project Name : Job Number

MACTEC

SCE&G COL : 6234-06-3534

# WELL LOG SOIL - Well No. OW-627B

Lithologic and Sampling Information from adjacent companion boring.

| Depth (feet) | Sample | Sample Type & No. | Uncorrected Blows/6 inches | Recovery (inches) | Water Content (%) | % Fines | Atterberg Limits (LL/PI) | Lithology | Soil Type (USCS) | Lithology | Remarks | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | SM | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 60% sand, 40% silt; slightly micaceous; SAPROLITE | | |
| 43 | | | | | | | | | | | | |
| 44 | | SPT 13 | 33 27 50/5 | 13/17 | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | Top of Partially weathered rock; very hard drilling from 46 to 47 ft | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | SPT 14 | 50/4 | 4/4 | | | | | | **SAND** silty (SM); yellowish brown (10 YR 5/6); moist; very dense; 65% sand, 35% silt;slightly micaceous; PARTIALLY WEATHERED ROCK | End day 4/12/06 water at 0 ft. Begin day 4/13/06 water at 12 ft | |
| 50 | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | |
| 52 | | | | | | | | | | | End of day on 4/13/06; water at 5 ft | |
| 53 | | | | | | | | | | | Begin day on 4/17/06 water at 27.5 ft | |
| 54 | | SPT 15 | 50/4 | 4/4 | | | | | | **SAND** silty (SM); yellowish brown (10 YR 5/4); moist; very dense; 75% sand, 25% silt; micaceous; PARTIALLY WEATHERED ROCK BORING TERMINATED AT 57.5 ft | | |
| 55 | | | | | | | | | | | End day 4/17/06 water at 27 ft | |
| 56 | | | | | | | | | | | | |
| 57 | | | | | | | | | | | Begin day 4/18/06 water at 27 ft | |
| 58 | | | | | | | | | | | | |
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# Final Report

# Appendix C-2

# Well Development Records

**Work Instruction Well Development**
SCE&G COL Project
MACTEC Engineering and Consulting, Inc.

Issued To: Chris Bruce/Kyle Miller/ Bill Sharp / Jeremy Harman / Mandel Harvey / Chris Gandy
Location: SCE&G COL Project Field Office Date: May 14, 2006
Issued By: Matthew F. Cooke, Site Coordinator MACTEC Project No.: 6234-06-3534
Valid Thru: 5/14/06 To 5/14/07 Rev. No. 0

**Task Description**: Performance and logging of observation well development of **31 Observation Wells** as listing in the Specification. Provide assistance in other drilling-related or geologic tasks as assigned.

**Applicable Technical Procedures or Plans, or other reference**: SCE&G COL Geotechnical Work Plan, Specification Section 5.3.6.

**Specific Instructions** (*note attachments where necessary*): See attached instructions for **Well Development Procedure prepared by Bechtel Hydrogeologist**.

**Special Instructions**: If unexpected conditions are encountered refer to page 2-6 of the Work Plan.

**Report Format**: Completed Forms As Follows: Daily Field Report, Well Development Record.

**Specific Quality Assurance Procedures Applicable**: None

Hold Points or Witness Points: Direction to develop well received from Site Coordinator.
Instructions or specifications received from Bechtel Representative.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By: (*Note: Only one signature is required to issue*)
Project Manager (MACTEC): Date:
Project Principal (MACTEC): Date:
Site Coordinator Date: 5/14/06

No. of Pages: 2 DCN: SC83

**OBSERVATION WELL DEVELOPMENT PROCEDURE**
**SCE&G V C SUMMER SITE**

1. Measure water levels and determine the standing well volume using the installation record for each well. The standing well volume is calculated based on the size of the well and the depth of water within the well pipe (using the formula 0.167 gallons per foot for 2" diameter well).
2. Bail the well until it is moderately clean with minimal sediment.
3. Using a submersible pump (without a check value), remove ~~2 to~~ at least 3 standing well volumes. Pump the wells resulting in appreciable drawdown. Periodically vary the pumping rate and the depth of the pump intake. Randomly turn the pump off an on, using the head of the water in the pump discharge column to flush back into the well, surging the well screen and filterpack.
4. A well is considered developed when the pumped water is reasonably free of suspended sediment and relatively clear to sight.
5. In the event, the formation is of such low permeability that the well recharge is very slow; it may not be possible to remove the planned number of well volumes. If the well becomes dry, pumping will cease and recovery of the water level will be monitored to judge the feasibility of continued pumping. In this case, well development will be considered complete after three pump-downs and recoveries are done. If recovery is extremely slow, such that the water level does not recover within 8 hours, contact the Project Principal for further direction.
6. Water removed during development process should be directed away from the well location by either discharging the pump output at least 30 feet away from the well or by storing it in containers for disposal in wooded or grass areas removed from the well. In either case, care should be taken to ensure that the discharged water does not create an erosion problem. Water disposal should be coordinated with MACTEC's site supervisor.

# Well Development Record

Well No.: OW-205A

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: C. GANDY | |
| Client Name: BECHTEL | Project Name: JCEG COL PROJECT | Checked By: MFC |
| Well Installation Date: 5/30/06 | Start Date: 6/5/06 | Finish Date: 6/8/06 |
| Well Development Date: 6/5/06 | Start Time: 1125 | Finish Time: 1048 |

Initial Water Level (ft.): SEE LOG (66.4' 6/5/06)

Water Level during **Initial** Pumping/Purging (ft).: 66.4'

Water Level at **Termination** of Pumping/Purging (ft).: DRY

Weather: GOOD

Height of Water Column: 44 (ft.)

44 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
____ gal./ft. (____ in.) = 7 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| | 1 | 7:30 | N/A | N/A | N/A | ~1.0 | SLIGHTLY TO CLEAR |
| | 2 | — | N/A | N/A | N/A | N/A | TURBID |
| | 2.8 | — | N/A | N/A | N/A | N/A | TURBID |
| | DRY - WELL STILL TURBID, WILL LET RECHARGE AND CHECK TOMORROW | | | | | | |
| 6/7/06 | 4 | | | | | | |
| 6/7/06 | 5 | 1800 | NA | NA | NA | NA | Cloudy |
| DRY 6/8/06 | 7 | 1048 | | | | | Slight to Cloudy |
| DRY | | | | | | | |

Notes: Resume 5:00 pm 06-07-06

6/7/06 - Developed with Pump. Surged Pump up and Down and turned pump on and off to generate surge into filter pack

Well Developers Signature: [signature]

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

DCN SC83

# Well Development Record

Well No.: OW 205B

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER | |
| Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: MFC 6/5/06 |
| Well Installation Date: 5/15/06 | Start Date: 5/16/06 | Finish Date: MFC ~~5/22/06~~ 5/18/06 |
| Well Development Date: 5/16/06 | Start Time: 3:10 PM | Finish Time: ~~1:30~~ 11:21 |
| Initial Water Level (ft.): ~~N/A~~ 59.5' (~~59.5~~ 61' TD) | | (TOC) |
| Water Level during **Initial** Pumping/Purging (ft).: 59.5' | | (TOC) |
| Water Level at **Termination** of Pumping/Purging (ft).: (DRY) 61' | | (TOC) |
| Weather: P. CLOUDY ~80's °F | | |

Height of Water Column: 1.5 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ~~0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~
0.16 gal./ft. (2 in.) = 0.24 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| ~~5/16~~ 5/16 5 | | N/A | N/A | N/A | N/A | VERY DRY |
| 5/17 ~~7~~ 10 | 9:55 AM | | | | N/A | MODERATE DRY |
| 5/22 12 | 11:21 am | | | | N/A | slight-mod, DRY |
| 6/7 14 | 1638 | | | | | slight to Mod DRY |
| 6/8 15 | 1050 | NA | NA | NA | NA | moderate to cloudy DRY |

Notes:

WELL DEVELOPED WITH BAILER

DCN 5083

Well Developers Signature: K M. K

**FIGURE 9**

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MACTEC Engineering and Consulting, Inc.

# Well Development Record

Well No.: OW-212

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE + G CoL | Checked By: |
| Well Installation Date: 5/25/06 | Start Date: 5-28-06 | Finish Date: |
| Well Development Date: 5-28-06 | Start Time: 1235 | Finish Time: |

Initial Water Level (ft.): 49.05' btoc (3' stickup)

Water Level during **Initial** Pumping/Purging (ft).: 49.05' btoc

Water Level at **Termination** of Pumping/Purging (ft).: 3:45, 6/9/06, 48.82' BTC (6/9/06)

Weather:

Height of Water Column: 19.25' (ft.)

19.25' 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (_____ in.) = 3.08 Well Volume (gal.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| | 1 | 1250 | | | | bail | Brown/turbid |
| | 4 | (3:45 to 4:15) | [Removed 10 gals Did not go dry. | | ] | Bail | Brown |
| 6/10/06 | 6 | 1141 | | | | Bail | Medi Turbid |
| | 8 | 1500 | | | | Bail | Cloud-Clear |
| 6/11/06 | 10 | 1020 | NA | NA | NA | Bail | 1st 1/2 gallon to mo derate. → Same As 6/10 |

Notes: t.d 68.30' btoc (3' stick up); bailed 1st well volume using bailer on 5-28-06

6/10/06 GW @ 49.1 BTOC
6/11/06 GW @ 49.2 BTOC

Well Developers Signature: Bill Sharp

**FIGURE 9**

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# Well Development Record

Well No.: OW-213

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: C. GANDY | |
| Client Name: BECHTEL | Project Name: SCE&G COL PROJECT | Checked By: MFC |
| Well Installation Date: 5/30/06 | Start Date: 6/5/06 | Finish Date: 6/5/06 |
| Well Development Date: 6/5/06 | Start Time: 1525 | Finish Time: 1618 |
| Initial Water Level (ft.): 42.95' | | |
| Water Level during **Initial** Pumping/Purging (ft).: 42.95' | | |
| Water Level at **Termination** of Pumping/Purging (ft).: | | |
| Weather: | | |

Height of Water Column: 12 (ft.)

12 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
____ gal./ft. (____ in.) = 1.92 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1525 | N/A | N/A | N/A | BAILED | VERY |
| 2 | 1540 | N/A | N/A | N/A | 3 MZW | VERY TO MODERATE |
| 3 | 1545 | N/A | N/A | N/A | " " | " " |
| 4 | 1549 | N/A | N/A | N/A | " " | " " |
| 5 | 1552 | N/A | N/A | N/A | " " | SLIGHT TO CLEAR |
| 6 | 1555 | N/A | N/A | N/A | " " | " " |
| 7 | 1558 | N/A | N/A | N/A | " " | CLEAR |
| 8 | 1601 | N/A | N/A | N/A | " | CLEAR |
| 9 | 1604 | N/A | N/A | N/A | " " | " " |
| 10 | 1607 | ↓ | ↓ | ↓ | " " | " " |
| 11 | 1610 | | | | " " | " " |
| 12 | 1613 | | | | 4 MZW | " " |
| 13 | 1616 | N/A | N/A | N/A | " " | " " |
| 13.5 | 1618 | N/A | N/A | N/A | 4 MZW | " " |
| | | | | | | |

Notes:

WELL WILL NOT GO DRY

Well Developers Signature: C. Gandy

**FIGURE 9**

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DCN 5083

# Well Development Record

Well No.: OW-227

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE +6 EOL | Checked By: mfc 6/5/06 |
| Well Installation Date: 5-25-06 | Start Date: 5-27-06 | Finish Date: 5/27/06 |
| Well Development Date: 5-27-06 | Start Time: 1205 | Finish Time: 1555 |

Initial Water Level (ft.): 63.68' btoc (2.5' stickup)

Water Level during **Initial** Pumping/Purging (ft).: 63.68' btoc

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Sunny 90s

Height of Water Column: 22.65 (ft.)

22.65 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (_____ in.) = 3.6 Well Volume (gal.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1220 | | | | bail | cloudy |
| 2 | 1256 | | | | 0.67 | turbid |
| 3 | 1302 | | | | 0.67 | turbid |
| 4 | 1308 | | | | 0.67 | moderate |
| 5 | 1314 | | | | 0.67 | moderate |
| 6 | 1320 | | | | 0.67 | moderate |
| 7 | 1440 ← Let well recover | | | | 0.85 | cloudy |
| 8 | 1445 | | | | 0.85 | clear |
| 9 | 1450 | | | | 0.85 | cloudy |
| 10 | 1455 | | | | 0.85 | cloudy |
| Let | well recover | | until | 1550 → | w.l. 66.78' btoc | |
| 11 | 1555 | | | | 0.85 | clear |

Notes: used bailer to purge 1st well volume. Pumped well dry after purging 6.5 well volumes; Let well recover for 1.2 hours then tagged w.l. at 65.54' btoc; pumped and surged well again until well went dry again (after pumping another 3.5 well volumes - total of 10 well volumes)

Well Developers Signature: Bill Sharp

FIGURE 9

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* used pump as surge block, raising and lowering pump several times after each 5-gallons of pumping

PCN 5083

# Well Development Record

Well No.: OW-233

| | | |
|---|---|---|
| Project No.: JCB46 COL PROJECT | Logged By: C. Gandy/M. Cooke | |
| Client Name: BECHTEL | Project Name: 6234-06-3534 | Checked By: mfc |
| Well Installation Date: 5/25/06 | Start Date: 6/5/06 | Finish Date: 6/7/06 |
| Well Development Date: 6/5/06 | Start Time: ~~2~~ 1445 | Finish Time: 1620 |
| Initial Water Level (ft.): 111' (6/5/06) 114.9 (6/7/06 1615) 112.1 5/11/06 1445 | | |
| Water Level during **Initial** Pumping/Purging (ft).: 111' (6/5/06) | | |
| Water Level at **Termination** of Pumping/Purging (ft).: | | |
| Weather: GOOD | | |

Height of Water Column: 9 (ft.)

9 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
____ gal./ft. (____ in.) = 1.44 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1445 | N/A | N/A | N/A | N/A | SLIGHT TO CLEAR |
| 2 | 1505 | N/A | N/A | N/A | N/A | " " |
| DRY | | | | | (BAILED) | |
| 6/7/06 ~~6/5/06~~ mfc ~~0.5~~ 2.5 | 1620 | NA | NA | NA | NA | Slight to Clear |

Notes: 5/11/06: MACTEC + Bechtel concur that water level should be obtained on 6/12/06 without further development due to low recharge rate.

Well Developers Signature: [signature]

**FIGURE 9**

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DCN 5083

# Well Development Record

Well No.: OW-305A

| | | | |
|---|---|---|---|
| Project No.: 6234-06-3534 | Logged By: C. GAHAY / M. COOKE | | |
| Client Name: BECHTEL | Project Name: SCE&G COL PROJECT | Checked By: MFC | |
| Well Installation Date: 5-29/06 | Start Date: 6/6/06 | Finish Date: 6/6/06 | |
| Well Development Date: 6/6/06 | Start Time: 1030 | Finish Time: 1600 | |
| Initial Water Level (ft.): 60.5 BTOC | | | |
| Water Level during **Initial** Pumping/Purging (ft).: 60.5' BTOC (58.5) | | | |
| Water Level at **Termination** of Pumping/Purging (ft).: | | | |
| Weather: SUNNY, NICE | | | |

Height of Water Column: ~~58.5~~ 82.5 (ft.) CEG 6/6/06

82.5 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = 13.2 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1030 | N/A | N/A | N/A | ~:45 | CLEAR |
| 2 | 1145 | | | | ~3:00 | CLEAR |
| 3 | 1345 | | | | ~2:30 | CLEAR |
| 4 | 1425 | | | | ~3:00 | CLEAR |
| 5 | 1530 | | | | BAZL | CLEAR |
| 6 | 1600 | NA | NA | NA | Bail | Clear |

Notes: Pumped 4 Well Volumes
Bailed 2 Well Volumes

Well Developers Signature: [signature]

**FIGURE 9**

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DCN 5C83

Done

# Well Development Record

Well No.: OW-305. B

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE+G COC | Checked By: MAF |
| Well Installation Date: 5-26-07 | Start Date: 5-27-06 | Finish Date: 6/6/06 |
| Well Development Date: 5-27-06 | Start Time: 1400 | Finish Time: 1020 |

Initial Water Level (ft.): 58.87' btoc (2.5' stick up)

Water Level during **Initial** Pumping/Purging (ft).: 58.87' btoc

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Sunny, 90s

Height of Water Column: 9.13 (ft.)

9.13 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
____ gal./ft. (____ in.) = 1.46 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| | 1 | | | | | bail | gray/turbid |
| | 2 | | | | | bail | gray/turbid |
| | 3 | | | | | bail | gray/turbid |
| | 4 | | | | | bail | cloudy |
| | 5 | | | | | bail | cloudy/milky |
| | 6 | | | | | bail | milky |
| Logged By: CEG 6/6/06 | 7 | 0930 | N/A | N/A | N/A | :45 | MODERATE |
| | 8 | 0933 | N/A | | | | " " |
| | 9 | 0937 | | | | | MOD.-SLIGHT |
| | 10 | 0941 | | | | | MOD.-SLIGHT |
| DRY → | 11 | 0945 | | | | | " " |
| | 12 | 1015 | | | | | SLIGHT-CLEAR |
| | 13 | 1018 | | | | | " " |
| DRY → | 14 | 1021 | | | | 1:30 | " " |

Notes: t.d. 68.0' btoc (2.5' stick up)
bailed dry?? after 3 well volumes; let well recover for 0.8 hrs.; tagged w.l. @ 58.90' btoc. Immediately after purging 6th well volume tagged w.l. at 59.50 btoc on 5-27-06

Well Developers Signature: Bill Sharp / [signature]

FIGURE 9

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DCN 5083

# Well Development Record

Well No.: OW 31Z

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER | |
| Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: MFC 6/5/06 |
| Well Installation Date: 5/12/06 | Start Date: 5/16/06 | Finish Date: 5/16/06 |
| Well Development Date: 5/16/06 | Start Time: 3:00 PM | Finish Time: |
| Initial Water Level (ft.): ~~40~~ N/A (TD 40) (TOC) | | |
| Water Level during **Initial** Pumping/Purging (ft).: | | |
| Water Level at **Termination** of Pumping/Purging (ft).: | | |
| Weather: P. CLOUDY ~80°'s °F | | |

Height of Water Column: _____ (ft.)

_____ 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| | | | | | | |

Notes: WELL IS DRY - 3:00 PM (5/16/06)
DRY 6/10/06 MFC 6/10/06

DCN 5083

Well Developers Signature: K Miller

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

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# Well Development Record

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER/CHRIS GANDY | Well No.: OW-313 |
| Client Name: Bechtel | Project Name: V.C. Summers | Checked By: mfc 6/5/06 |
| Well Installation Date: 5/13/06 | Start Date: 5/22/06 | Finish Date: 5/23/06 |
| Well Development Date: 5/22/06 | Start Time: 0900 | Finish Time: 10:30 AM |

Initial Water Level (ft.): 50' (TOC)

Water Level during **Initial** Pumping/Purging (ft).: 50' (TOC)

Water Level at **Termination** of Pumping/Purging (ft).: 49.8'

Weather: CLOUDY 80's °F

Height of Water Column: 11.0 (ft.)

✓ 0.16 gal./ft. (2 in.)
~~x 0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~

0.16 gal./ft. (2 in.) = 1.76 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| BAILER | 2 | ~ 9:00 AM | N/A | N/A | N/A | N/A | VERY |
| PUMP | 13 | ~ 9:50 AM | ↓ | ↓ | ↓ | 0.6 gal/min | MODERATE |
| PUMP | 20 | ~ 10:30 AM | ↓ | ↓ | ↓ | 0.6 gal/min | SLIGHT-CLEAR |

Notes: well developed with bailer, then pump was used to attempt to purge dry. Well did not purge dry.

DCN 5083

Well Developers Signature: KMiller

**FIGURE 9**

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# Well Development Record

Well No.: OW-327

| | | |
|---|---|---|
| Project No.: 6234-06-35345 | Logged By: MFC | |
| Client Name: Bechtel | Project Name: SCE+G CO Site | Checked By: MFC |
| Well Installation Date: 3/29/06 | Start Date: ~~MFC 3/29/06~~ 6/8/06 | Finish Date: 6/9/06 |
| Well Development Date: 6/8/06 – 6/9/06 | Start Time: 1500 | Finish Time: 1120 |

Initial Water Level (ft.): 54.50

Water Level during **Initial** Pumping/Purging (ft).: 54.50 BTOC (69.5 = TWD BTOC)

Water Level at **Termination** of Pumping/Purging (ft).: DRY

Weather:

Height of Water Column: 15 (ft.) × 15 × 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
2.4 gal./ft. (2 in.) = 2.4 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1500 | | | | Bail | Mod Turbid |
| 3.5 | 1520 | NA | NA | NA | 1.0 | Mod Turbid |
| 6.0 (DRY) | 1630 | NA | NA | NA | 1.0 | Cloudy |
| 12.0 Total (DRY) | 1030 6/9/06 | NA | NA | NA | 0.1 | Slightly Cloudy |
| 15 (Dry) | 1120 6/9/06 | NA | NA | NA | 0.1 | Clear |

Notes: Bailed 1st Well Volume.

Well Developers Signature: [signature]

**FIGURE 9**

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DCIY 5083

# Well Development Record

Well No.: OW-333

| | | |
|---|---|---|
| Project No.: 1239--06-3534 | Logged By: M. Harvey | |
| Client Name: BECHTEL | Project Name: SCE+G Coal Project | Checked By: MFC |
| Well Installation Date: 5/28/06 | Start Date: 06-07-06 | Finish Date: 06-07-06 |
| Well Development Date: 0-0 | Start Time: 1015 | Finish Time: 3:30 |

Initial Water Level (ft.): 60.65' BGS ~~69.65' deep~~ MH 6-7-6

Water Level during **Initial** Pumping/Purging (ft).:

Water Level at **Termination** of Pumping/Purging (ft).:

Weather:

Height of Water Column: 9 (ft.)

9 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
____ gal./ft. (____ in.) = 1.44 Well Volume (gal.~~/ft.~~) MH 6-7-6

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| MH 6-7-6 1 2 | 1030 | bailed from 1015 to | | 1030 | | very turbid muddy |
| 3 | 1035 | went dry after pumping | | 1 volume | recharg Sim. | very turbid |
| 4 | 1045 | reduced flow rate | | | | |
| 6 | 1107 | pumped dry | allow for recharge | surge & pump | | muddy |
| 8 | 1137 | restarted at | 1027 pumped dry | | | turbid |
| 11 | 1228 | let pump | low flow | restart at | 1237 | clear |
| 14 | Surge make | muddy resume | pumping | 1242 | | muddy |
| 17 | pump dry | | | | | cloudy |
| 18 | 1:58 | pump dry, let recharge | | | | cloudy |
| 21 | 230 | resume | 213 let pump dry | low flow | | cloudy/clean |
| 25 | 324 | resume | 300, clearer | | | clear |

Notes:

69.65 Total depth BGS Bailed first two volumes, - highly turbid.
1099-6-7-6 pump dry, turn off pump allow recharge.

Well Developers Signature: Marcel Harvey

**FIGURE 9**

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DCN 5083

# Well Development Record

Well No.: 401a

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER/CHRIS GANDY | |
| Client Name: BECHTEL | Project Name: VC summers | Checked By: MFC |
| Well Installation Date: 5/15/06 | Start Date: 5/23/06 | Finish Date: 5/23/06 |
| Well Development Date: 5/23/06 | Start Time: 8:50 AM | Finish Time: 1300 |

Initial Water Level (ft.): 56.8' TOC (stick-up = 3.7') BOTTOM OF WELL = 96.2' TOC

Water Level during **Initial** Pumping/Purging (ft).: 56.8 (TOC)

Water Level at **Termination** of Pumping/Purging (ft).: DRY

Weather: P. CLOUDY ~80°F

Height of Water Column: ~~39.1~~ (ft.) 39.4'

✓ 0.16 gal./ft. (2 in.)
x ~~0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~
0.16 gal./ft. (2 in.) = 6.3 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| Bailer | 1/2 | 8:50 AM | N/A | N/A | N/A BAIL | ~~0.5g/min~~ N/A | VERY |
| Pump | 2 | 9:30 AM | N/A | N/A | N/A | 0.5g/min | slight-mod. (DRY) |
| Pump | 3 | 10:25 AM | N/A | N/A | N/A | 0.5g/min | slight (DRY) |
| | 4 | 1:00 PM | N/A | N/A | N/A | 0.5g/min | slight (DRY) |

Notes: - Pad and casing not yet completed (5/23/06) - 3.7' stick-up of 2" well casing
- Well developed with bailer, then pump was used to purge well dry

DCN 5083

Well Developers Signature: [signature]

**FIGURE 9**

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# Well Development Record

Well No.: OW 401 B

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER | |
| Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: MH C |
| Well Installation Date: 5/11/06 | Start Date: 5/16/06 | Finish Date: 5/17/06 |
| Well Development Date: 5/16/06 | Start Time: 11:55 | Finish Time: 9:00 AM |

Initial Water Level (ft.): 52.3 65.5

Water Level during **Initial** Pumping/Purging (ft).: 52.3

Water Level at **Termination** of Pumping/Purging (ft).: 54.5

Weather: P. CLOUDY ~80's (°F)

Height of Water Column: 13.2 (ft.)

✓ 0.16 gal./ft. (2 in.)
x 0.65 gal./ft. (4 in.)
1.5 gal./ft. (6 in.)

0.16 gal./ft. (2 in.) = 2.11 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 11:55 | N/A | N/A | N/A | N/A | VERY |
| ~~1.5~~ 1.5 | 12:45 | N/A | N/A | N/A | N/A | VERY DRY |
| 2.5 | 8:45 | N/A | N/A | N/A | N/A | slightly DRY |
| 3.25 | 9:00 AM | N/A | N/A | N/A | N/A | slightly DRY |

11:45 DRY
slig DRY
DRY (5/17)

Notes: Well developed with Bailer
Dry at noted intervals

DCN 5083

Well Developers Signature: KMiller

**FIGURE 9**

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# Well Development Record

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER/CHRIS GANDY | Well No.: OW-405 |
| Client Name: Bechtel | Project Name: V.C. Summers | Checked By: MFC |
| Well Installation Date: 5/11/06 | Start Date: 5/22/06 | Finish Date: 5/23/06 |
| Well Development Date: 5/22/06 | Start Time: 1300 | Finish Time: 2:00 PM |
| Initial Water Level (ft.): 41.7' (TOC) | | |
| Water Level during **Initial** Pumping/Purging (ft).: 41.7' (TOC) | | |
| Water Level at **Termination** of Pumping/Purging (ft).: 41.7' (TOC) | | |
| Weather: CLOUDY 80's °F | | |

Height of Water Column: 16.3 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ~~0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~
0.16 gal./ft. (2 in.) = 2.61 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| BAILER | 1/2 | 1:00PM | N/A | N/A | N/A | N/A | VERY |
| PUMP | 6 | 1:30PM | ↓ | ↓ | ↓ | 1.3 g/min | MODERATE |
| PUMP | 10 | 2:00PM | ↓ | ↓ | ↓ | 1.3 g/min | SLIGHT-CLEAR |

Notes: Well developed with bailer, then pump was used to attempt to purge well dry. Well did not purge dry

DCN 5083

Well Developers Signature: K. M.

**FIGURE 9**

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MACTEC Engineering and Consulting, Inc.

# Well Development Record

Well No.: OW-501

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: MtCook | |
| Client Name: Bechtel | Project Name: ~~62~~ SCE+G COL | Checked By: MtC |
| Well Installation Date: 8/2/06 | Start Date: 8/4/06 | Finish Date: 8/6/06 |
| Well Development Date: 8/4/06 - 8/6/06 | Start Time: 1000 | Finish Time: 1032 |

Initial Water Level (ft.): 8.7

Water Level during **Initial** Pumping/Purging (ft).: 8.7

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Hot

Height of Water Column: 23.3 X 0.16 gal./ft. (2 in.)
23.3 (ft.) x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = 0.5 Well Volume (gal./ft.)

| Gallons ~~Number of Well Volumes:~~ MtC 8/6/06 | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity ~~(NTU's):~~ Visual MtC 8/6/06 |
|---|---|---|---|---|---|---|
| 5 | 1023 | NA | NA | NA | 0.5 | Very Turbid |
| 5 | 1035 | NA | NA | NA | | Turbid |
| 5 | 1045 | NA | NA | NA | | Turbid |
| 5 | 1100 | NA | NA | NA | | Mod Turbid |
| Dry 8/4/06 | | NA | NA | NA | | Mod Turbid |
| 1 flow 20 gallons | 5 | 0920 | NA | NA | NA | Cloudy |
| 5 | 0934 | NA | NA | NA | 0.5 | Cloudy. |
| Dry after 10 gal 8/6/06 | | | | | | |
| Begin 8/6/06 | | | | | | |
| 5 | 1000 | NA | NA | NA | 0.25 | Slight |
| 5 | 1030 | NA | NA | NA | 0.25 | Clear |
| Dry After 10 8/6/06 | | | | | | |

Notes: Surged pump up and down during development.

DCN 5083

Well Developers Signature: [signature]

**FIGURE 9**

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.

# Well Development Record

Well No.: DW612

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER | |
| Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: MFC |
| Well Installation Date: 5/3/06 | Start Date: 5/16/06 | Finish Date: 5/17/06 |
| Well Development Date: 5/16/06 | Start Time: 1:55 pm | Finish Time: 10:30 AM |

Initial Water Level (ft.): 52.1' (62.5' Total Depth) TOC casing

Water Level during **Initial** Pumping/Purging (ft).: 52.1

Water Level at **Termination** of Pumping/Purging (ft).: 51.7

Weather: P. CLOUDY ~80's °F

Height of Water Column: 10.4 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ~~0.65 gal./ft.~~ (4 in.)
~~1.5 gal./ft.~~ (6 in.)
0.16 gal./ft. (2 in.) = 1.66 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| 5/16/06 | 1 | 1:55 (PM) | N/A | N/A | N/A | N/A | VERY |
| | 3.5 | 6:30 PM | | | | N/A | VERY (DRY) |
| 5/17 | 4.5 | 8:30 AM | | | | Pump 1.5/5min | VERY (DRY) |
| 5/17 | 5.5 | 9:40 AM | | | | 1.5/5min | MODERATE (DRY) |
| 5/17 | 6.5 | 10:30 AM | | | | 1.5/5min | SLIGHTLY (DRY) |

Notes: DEVELOPED WITH BAILER FOR FIRST TWO PURGES, THEN USED PUMP!

DCIY 5083

Well Developers Signature: [signature]

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

# Well Development Record

Well No.: OW614

Project No.: 6234-06-3534 | Logged By: KYLE MILLER

Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: mt C

Well Installation Date: 5/8/06 | Start Date: 5/16/06 | Finish Date: ~~5/16/06~~ ~~5/16/06~~ 6/10/06 mt C 6/10/06

Well Development Date: 5/16/06 | Start Time: ~~11:~~ 8:30 | Finish Time: 5:50 PM

Initial Water Level (ft.): 30.2 TD = 33.1' (TOC)

Water Level during **Initial** Pumping/Purging (ft).: 30.2' (TD = 33.1') (TOC measurements)

Water Level at **Termination** of Pumping/Purging (ft).: 30.3 30.20

Weather: P. CLOUDY 80's (°F)

Height of Water Column: 3.1 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ~~0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~

0.16 gal./ft. (2 in.) = 0.496 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| | ~~1~~ | 8:30 (AM) | N/A | N/A | N/A | ~~0.5/5min~~ | VERY |
| | ~~1~~ 2 | 8:35 | N/A | N/A | N/A | ~~0.5/5min~~ | VERY |
| | ~~1~~ 3 | 8:40 | N/A | | | ~~0.5/5min~~ | VERY |
| well Dry | ~~1~~ 4 | 8:47 | | | | ~~0.5/7min~~ | VERY |
| | 2 | ← Recharge | | | | | |
| | ~~1~~ 5 | 9:48 | | | | ~~0.5/5min~~ | VERY |
| well Dry | ~~1~~ 6 | 9:54 | ← Recharge | | | 0.5/6min | VERY |
| well Dry | 8 | 10:45 | ← Recharge | | | NA | slight to mod. |
| 6/10 DRY | 10.5 | 5:50 PM | | | | N/A | slight-mod. |
| 6/9/06 | 12.5 | 15:00 | (4 gallons) | dry NA | NA | Bail | Turbid |
| 6/10/06 DRY | 18.5 | 1545 | | | | NA Bail | |

Notes:

- Well Developed with Bailer
- well went dry after 4, 6, 8 well volumes. Allowed to recharge in between.

~~1~~ 10.5 (KM 5/17/06)

6/10/06 - WL @ 30.3 BTOC 1428 Notes: 1st Bailer Cloudy, Rust Red/Brn Turbidity + Minor sediments DCN 5083

Well Developers Signature: KCMiller

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

# Well Development Record

Well No.: OW-617.

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE+G COL | Checked By: MFC |
| Well Installation Date: 5/24/06 | Start Date: 5-29-06 | Finish Date: 6/10/06 |
| Well Development Date: 5-29-06 | Start Time: 1015 | Finish Time: 1430 |

Initial Water Level (ft.): 100.97' btoc (3' stick up)

Water Level during **Initial** Pumping/Purging (ft).: 100.97 100.95 (6/09/06)

Water Level at **Termination** of Pumping/Purging (ft).: DRY

Weather:

Height of Water Column: 5.43 (ft.)

5.43 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (_____ in.) = 0.9 Well Volume (gal.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1030 | | | | | brown/muddy |
| DRY → tagged | w.l. @ 105.38 after bailing dry - let recharge | | | | | |
| DRY → 2 | 1500 | bailed dry after well fully recovered | | | | brown/muddy |
| DRY → 3 | 1515 | bailed dry after 1 gallon | | | | Very turbid |
| 3.75 | 1430 | | | | Bail | Cloudy to Turbid |
| DRY → 6/10/06 | | | | | | |

Notes: t.d. 106.40' btoc (3' stick up)
Tagged WL @101' BTOC 6/10/06
notes: 6/10/06 1st Bailer Cloudy-Clear. 2nd + 3rd Turbid w/ some sediment.

Well Developers Signature: Bill Sharp

FIGURE 9

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# Well Development Record

Well No.: OW-C18

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: KYLE MILLER | |
| Client Name: BECHTEL | Project Name: VC SUMMER | Checked By: mt C |
| Well Installation Date: 5/12/06 | Start Date: 5/17/06 | Finish Date: ~~5/17/06~~ mt C 6/9/06 |
| Well Development Date: 5/17/06 - 6/9/06 | Start Time: 11:50 AM | Finish Time: 12:35 PM |
| Initial Water Level (ft.): 7.0 (TOC) | 32.7 TD (TOC) | |
| Water Level during **Initial** Pumping/Purging (ft).: 7.0 | | |
| Water Level at **Termination** of Pumping/Purging (ft).: 6.9 | 7.10 6/09/06 | |
| Weather: P. cloudy ~80's (°F) | | |

Height of Water Column: 25.7 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (2 in.) = 4.11 Well Volume (gal./ft.)

| Number ~~of Well Volumes~~: Total gallons | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 4.5 | 11:50 AM | NA | NA | NA | Bail | Mod. |
| DRY → 6.0 gal | 12:00 | NA | NA | NA | pump 1g/1min | Mod (Dry) |
| DRY → 5.0 gal | 12:15 PM | N/A | N/A | NA | Pump 3g/3min | slight-Mod (Dry) |
| 6.0 gal | 12:35 PM | N/A | N/A | NA | Pump 5g/3min | slight-Mod (Dry) |
| 12 gal | 17:05 6/9/06 | NA | NA | NA | 0.25 | Clear |

Notes: WELL DEVELOPED WITH BAILER, THEN PUMP WAS USED TO PURGE THE 2ND, 3RD, AND 4TH TIMES

DCN 5083

Well Developers Signature: [signature]

**FIGURE 9**

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# Well Development Record

Well No.: 619

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: JR Harmon | |
| Client Name: SCE+G | Project Name: SCE+G COL | Checked By: MFC |
| Well Installation Date: 5/28/06 | Start Date: 6/6/06 | Finish Date: 6/9/06 |
| Well Development Date: 6/6/06 | Start Time: 1430 | Finish Time: 1430 |

Initial Water Level (ft.): NA (see note 1)

Water Level during **Initial** Pumping/Purging (ft).: DRY Added Water See Below

Water Level at **Termination** of Pumping/Purging (ft).: See Below.

Weather:

Height of Water Column: _____ (ft.)

_____ 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 6/6/06 | 1430 | Added 5 gals, bailed 2 to slightly Turbid | | | bailers | = clear |
| | 1445 | Added another 10 gals | | | | |
| | | Bailing, surging | | with bailer, bailing | | |
| | 1530 | Total 5 gals removed = muddy visible $H_2O$ | | | | |
| | 1600 | Bailed 1½ additional gallons = very muddy with ~~[illegible]~~ Removing most of water from well (Times 3) | | | | |
| | 1605 | Added | 4 gal potable $H_2O$. Let sit overnight | | | |
| 6/7/06 | ~~[illegible]~~ (6P) | 1545 - | 1600 Bailed 4 gals. Dry. | | | |
| 6/9/06 | 1430 | Bailed 3/4 gallon (Dry) | First Bailer clear rest Turbid Let stand over weekend | | | |

Notes:

① Cook + Day could not get a WL Reading at 1100. W.L. meter to ~97', well Depth 106' from stick up. Tag Tap slight wet bottom ≈ 5 ft of well depth.

* Water added to well per instructions from Bechtel Rep. Garrett Day. Put in 14 gallons. Removed ~11.5 gallons total won't dry each day of Bailing

Well Developers Signature: [signature]

**FIGURE 9**

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DCN 5083

# Well Development Record

Well No.: OW-620

| | | |
|---|---|---|
| Project No.: 6234-06-35345 | Logged By: Cooke/Brnco | |
| Client Name: Bechtel | Project Name: SCF+G COL rcs 5/14/06 | Checked By: MF C |
| Well Installation Date: 5/1/06 | Start Date: ~~5/14/06~~ | Finish Date: 5/14/06 |
| Well Development Date: 5/14/06 | Start Time: 1045 | Finish Time: 1430 |

Initial Water Level (ft.): 39.7 (TWD = 75.4)

Water Level during **Initial** Pumping/Purging (ft).: 39.7

Water Level at **Termination** of Pumping/Purging (ft).: 38.3

Weather: Partly Cloudy ~70s

~~Height of Water Column: 35.7 (ft.)~~

~~35.7 0.16 gal./ft. (2 in.)~~
~~x 0.65 gal./ft. (4 in.)~~
~~1.5 gal./ft. (6 in.)~~
~~35.7 gal./ft. (____ in.) = _____ Well Volume (gal./ft.)~~

MF C 5/14/06

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity ~~(NTU's)~~ (visual) |
|---|---|---|---|---|---|---|
| 1 | 1120 | NA | NA | NA | | Cloudy |
| 2 | 1125 | NA | NA | NA | 1.25 | Cloudy |
| 3 | 1128 | NA | NA | NA | 1.25 | Cloudy |
| 4 | 1132 | NA | NA | NA | 1.25 | Cloudy |
| 6 | 1139 | NA | NA | NA | 1.25 | Mod. Cloudy |
| 8 | 1147 | NA | NA | NA | 1.25 | Mod. Cloudy |
| 12 | 1204 | NA | NA | NA | 1.25 | Mod. Cloudy |
| 14 | 1217 | NA | NA | NA | 1.25 | Mod Cloudy |
| 28 | 1430 | NA | NA | NA | 1.25 | Clear |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Notes: 2" Well Vol Initial = $\frac{\pi (0.17)^2}{4} \times 35.7 = 0.78\ ft^2$
$= 5.82$ gallons

Bailed ~ 3 gallons from well, then began pumping with SS. Monsoon 12 Volt pump. Surged with pump periodically by lifting up and down.

Well Developers Signature: [signature]

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

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DCN 5083

# Well Development Record

Well No.: OW-621A

Project No.: 6234-06-3534 | Logged By: Bill Sharp/MFC

Client Name: SCE+G COL (Bechtel) | Project Name: SCE+G COL | Checked By: MFC

Well Installation Date: 5-26-06 | Start Date: 5-27-06 | Finish Date: 6/9/06

Well Development Date: 5-27-06 | Start Time: 1005 | Finish Time: 1545

Initial Water Level (ft.): 69.88' btoc (2.3' stick up) t.d. 99.30' btoc

Water Level during **Initial** Pumping/Purging (ft).: 69.88 btoc

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Sunny 90s was 5-29-06

99.3' t.d - 69.88 (w.l.) ~~- 2 sump~~ = 29.4' water column

Height of Water Column: 29.4 (ft.)

29.4 x 0.16 gal./ft. (2 in.)
0.65 gal./ft. (4 in.)
1.5 gal./ft. (6 in.)
0.16 gal./ft. (____ in.) = ~~4.4~~ 4.7 Well Volume (gal.) was 5-29-06

291.75
6-7-6
915am
hard bottom
96.55
BGS

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1030 | | | | Bail | Moderate |
| 1.5 | 1045 | | | | Bail | Moderate |
| 5-28-06 2.0* | 0950 | | | | Bail | brown/turbid |
| *bailed dry after bailing ~2.5 gallons first thing 5-28-06 morning | | | | | | |
| - measured w.l. on 5-28-06 at 1210 91.93' btoc | | | | | | |
| - measured w.l. on 5-29-06 at 0820 after almost 23 hours of recovery | | | | | | |
| 5-29-06 0908 @ 91.44 (recovered ~0.5' in ~23 hours) | | | | | | |
| bailed ~1.3 gallons of water from until dry - tagged w.l. | | | | | | |
| immediately after bailing dry @ 98.3' btoc on 5-29-06 | | | | | | |
| - measured rate of recovery - @ 0918 w.l. 97.7' (recovered | | | | | | |
| 0.6' in 6 minutes, ~0.1' (min) | | | | | | |
| 6/7/06 1400 1 gallon | 1400-1430 | NA | NA | NA | NA | Moderate |
| 1545 | | | | | | |

Notes: Bailed well dry after 1.5 well volumes on 5-27-06; tagged w.l. after bailing 1.5 well volumes at 95.1' btoc

5-7-6 - begin pumping at 0928 in the morning - not enough water to fill tubing - can't pump

6/7/06 1400 GW @ 94.2 Below TOC; @1545 GW @ 97.05

DCIY 5C83

Well Developers Signature: Bill Sharp

FIGURE 9

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# Well Development Record

Well No.: mf 06/7/06 ~~OW-627~~ OW-621A

| | | |
|---|---|---|
| Project No.: 6234-06-35345 | Logged By: Cooke | |
| Client Name: BECHTEL | Project Name: SCE+G COL | Checked By: mf |
| Well Installation Date: 5/26/06 | Start Date: 5/27/06 | Finish Date: 6/9/06 |
| Well Development Date: 5/27/06 → | Start Time: See Pg. 1 | Finish Time: 1545 |

Initial Water Level (ft.): 94.2 BTOC on 6/7/06 (2.3' stickup) TWD = 99.4 BTOC

Water Level during **Initial** Pumping/Purging (ft).: 94.2

Water Level at **Termination** of Pumping/Purging (ft).: Dry

Weather:

Height of Water Column: 5.2 (ft.)

5.2 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
0.83 gal./ft. (2 in.) = 0.83 Well Volume (gal./ft.)

Development 6/7/06 →

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1400 | NA | NA | NA | NA | Moderate |
| Dry → | | | | | | |
| 2 | 1545 | NA | NA | NA | NA | Moderate |
| Dry → | | | | | | |

Notes:

water Column Ht = 99.4 - 94.2 = 5.2

6/9/06 - Tagged GW @ 98.9. Well not fully Recharged after development on 6/7/06. Only ~4" water in well. Allow to recharge for WL Round on 6/12.

Well Developers Signature: [signature]

**FIGURE 9**

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# Well Development Record

Well No.: OW-621B

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel SLE+G COL | Project Name: SLE+G COL | Checked By: MFC |
| Well Installation Date: 5-25-06 | Start Date: 5-27-06 | Finish Date: 5-27-06 |
| Well Development Date: 5-27-06 | Start Time: 0857 | Finish Time: 0945 |
| Initial Water Level (ft.): 50.5' bgs | | |
| Water Level during **Initial** Pumping/Purging (ft).: 50.5 | | |
| Water Level at **Termination** of Pumping/Purging (ft).: 69.43 | | |
| Weather: Sunny | | |

Height of Water Column: 17.8 (ft.)

17.8 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = 2.8 Well Volume (gal.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 0900 | | | | bail | moderate |
| 2 | 0918 | | | | 0.8 | moderate |
| 3 | 0922 | | | | 0.8 | moderate |
| 4 | 0926 | | | | 0.8 | moderate |
| 5 | 0930 | | | | 0.8 | moderate |
| 6 | 0934 | | | | 0.8 | sl. turbid |
| 7 | 0938 | | | | 0.8 | clear |
| 8 | 0942 | | | | 0.8 | clear |
| 9 | 0945 | | | | 0.8 | clear |

Notes: Removed 1st well volume with bailer
Pumped a total of ~ 27 gallons
- Clear and free of sediment.
- used pump as a surge block, periodically raising and lowering pump

Well Developers Signature: Bill Sharp

FIGURE 9

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# Well Development Record

Well No.: OW-622

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE+G CoL | Checked By: MFC |
| Well Installation Date: 5-25-06 | Start Date: 5-27-06 | Finish Date: 6/7/06 |
| Well Development Date: 5-27-06 | Start Time: 1620 | Finish Time: 0910 |

Initial Water Level (ft.): 44.90' btoc (1.2' stick up)

Water Level during **Initial** Pumping/Purging (ft).: 44.90' btoc 6/7/06 ▽ 45.1

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Sunny 90s

Height of Water Column: 14.85' (ft.)

14.85 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (____ in.) = 2.4 Well Volume (gal./~~ft.~~)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1630 | | | | bail | turbid/gray |
| 2 | 1635 | | | | 0.6 | turbid/gray |
| 3 | 1639 | | | | 0.6 | turbid/gray |
| 4 | 1643 | | | | 0.6 | turbid/gray |
| 5 | 1647 | | | | 0.6 | turbid/gray |
| 6 | 1651 | | | | 0.6 | turbid/gray |
| 7 | 1655 | | | | 0.6 | cloudy |
| 9 | 831 | | | | | Murky |
| 11 | 839 | | | | | Milky Cloudy |
| 13 | 846 | Surged well with Pump & turned Pump off | | | | Murky |
| 15 | 852 | | | | | Milky Cloudy |
| 17 | 857 | | | | | milky Cloudy |
| 19 | 910 | turned pump off | | | | cloudy/clear |
| | | | | | | |
| | | | | | | |

6-7-06 (M. Harvey)

Notes: t.d. 59.75' btoc (1.2' stick up); bailed 1st well volume; tagged w.l. after purging 7 volumes @ 18.2' bgs (had ≈ 4 minutes to recover before I actually got w.l. tape down well)
- Surged well by raising and lowering pump repeatedly after each 5 gallons of water pumped.

Well Developers Signature: Bill Sharp

FIGURE 9

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DCN 5083

# Well Development Record

Well No.: OW-623

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE+G CoL | Checked By: MF C 6/6/06 |
| Well Installation Date: 5/26/06 | Start Date: 5-28-06 | Finish Date: ~~6/5/06~~ 6/5/06 |
| Well Development Date: 5-28-06 | Start Time: 1035 | Finish Time: |

Initial Water Level (ft.): 72.00' btoc (2.2' stick up)

Water Level during **Initial** Pumping/Purging (ft).: 72.00'

Water Level at **Termination** of Pumping/Purging (ft).:

Weather: Sunny; 90's

Height of Water Column: 19.80' (ft.)

19.80 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (____ in.) = 3.2 Well Volume (gal.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1035 | | | | 0.1 | brown/turbid |
| 2 | 1056 | | | | 0.8 | moderate |
| 3 | 1116 | | | | 0.7 | moderate |
| 4 | 1122 | | | | 0.6 | slightly turbid |
| Surged well by raising and lowering pump several times | | | | | | |
| 5 | 1133 | | | | 0.6 | brown/turbid |
| 6 | 1145 | - pumped dry after 6 well volumes | | | 0.5 | brown/turbid |
| Had to leave and pick up fully charged battery for pump - low voltage on this one | | | | | | |
| w.l. after recovering ≈ 1.75 hrs @ 73.4' btoc | | | | | | |
| 7 | 1335 | | | | 0.7 | brown/turbid |
| 8 | 1340 | | | | 0.6 | milky |
| 9 | 1352 | Surged pump up and down | | | 0.5 | brown/turbid |
| 10 | 1409 | surged pump up and down | | | 0.6 | moderate |
| well pumped dry after 10 well volumes | | | | | | |
| | | | | | | |

Notes: t.d. 91.8' btoc (2.2' stick up)
on 5-28-06 measured recharge rate - w.l. recovered from 86.2' to 84.3' in ≈ 12 minutes (≈ 1' recovery every 6 minutes)
* PUMPED 4.5 MORE WELL VOLUMES, WELL PRODUCED SLIGHTLY TURBID WATER
CEG 6/5/06

Well Developers Signature: Bill Sharp

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms



DCN 5083

# Well Development Record

Well No.: OW-624.

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp | |
| Client Name: Bechtel | Project Name: SCE+G COL | Checked By: MFC |
| Well Installation Date: 5/24/06 | Start Date: 5-28-06 | Finish Date: 6/9/06 |
| Well Development Date: 5-28-06 | Start Time: 1550 | Finish Time: 0935 |

Initial Water Level (ft.): 55.22' btoc (0.8' stick up) 57.6 (6/8/06)

Water Level during **Initial** Pumping/Purging (ft).: 55.22

Water Level at **Termination** of Pumping/Purging (ft).:

Weather:

Height of Water Column: 1.23' (ft.)

1.23' 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (2 in.) = 1.1 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1605 | | | | bail | gray/turbid |
| 1.50 | 1615 | | | | bail | gray/turbid |
| well | bailed dry | after | ~1.5 | Well | volumes | bail |
| 2.5 | 1545 | NA | NA | NA | bail | slight (1st 1/2 gallon) |
| 3.5 | 0935 | NA | NA | NA | bail | to moderate |
| | | | | | | same |

6/8/06 DRY

6/09/06 Dry

Notes: T.d. 62.45' btoc (0.8' stick up)

Tagged GW @ 59.96 BTOC 6/9/06. Well not fully Recharged after development on 6/8/06. Let well recharge for Wh Rand on 6/12/06

Well Developers Signature: Bill Sharp/MFC

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms



DCN SC 83

# Well Development Record

Well No.: OW-625

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: Bill Sharp / M. Cooke | |
| Client Name: Bechtel | Project Name: SCE+G COL | Checked By: MFC |
| Well Installation Date: 5/23/06 | Start Date: 5-25-06 | Finish Date: 6/8/06 |
| Well Development Date: 5-28-06 | Start Time: 1510 | Finish Time: 1345 |

Initial Water Level (ft.): 89.24' btoc (3' stickup) 89.4 (6/8/06)

Water Level during **Initial** Pumping/Purging (ft).: 89.24' btoc

Water Level at **Termination** of Pumping/Purging (ft).: 90.8 6/8/06

Weather: Sunny 90s

Height of Water Column: 19.56' (ft.)

19.56' 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (_____ in.) = 3.1 Well Volume (gal.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1535 | NA | NA | NA | bail | brown/turbid |
| 6/8/06 3 | 1200 | NA | NA | NA | 0.75 | Moderate |
| 7 | 1220 | NA | NA | NA | 0.75 | Slight-Cloudy |
| 8 | 1230 | NA | NA | NA | 0.75 | Slight to Clear |
| 18 | 1345 | NA | NA | NA | 0.75 | Slightly Cloudy |

Notes: t.d. 110.80' btoc (3' stickup); bailed 1st well volume with bailer

Pumped 17 Volumes with Pump. Raised and lowered pump during purge to surge filter pack. Turned pump on and off to allow water to fall into well and surge filter pack MFC 6/8/06

Well Developers Signature: Bill Sharp / [signature]

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms



DCN SC 83

# Well Development Record

Well No.: OW-626

| | | |
|---|---|---|
| Project No.: 6234-06-3534 | Logged By: C Bruce / M. Cooke | |
| Client Name: Bechtel | Project Name: SAE 6 Col Project | Checked By: mfc |
| Well Installation Date: 5/15/06 | Start Date: 8:5/15/06 | Finish Date: 5/15/06 |
| Well Development Date: 5/15/06 | Start Time: 8:40 | Finish Time: 1500 |

Initial Water Level (ft.): 49.61 TD 85.31

Water Level during **Initial** Pumping/Purging (ft).: ~~NA~~ mfc 5/22/06 49.61

Water Level at **Termination** of Pumping/Purging (ft).: ~~NA~~ 49.8

Weather: Clear warm mfc 5/16/06

Height of Water Column: 35.7 (ft.)

_____ 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
0.16 gal./ft. (2 in.) = 5.7 Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 6 gal 1 | 8:50 | NA | NA | NA | 0.5 Bail | Cloudy |
| Blow | Fuses | on | pump | when | setting up | Very high |
| 10 gal 2* | 11:00 | NA | NA | NA | 1 gal | Turbid |
| Dry | | | | | | |
| 16 gal 3 | 1400 | NA | NA | NA | ≈0.5 gpm | Clear |
| Dry | | | | | | |
| 19 gal 3.5 | 1500 | NA | NA | NA | ≈0.25 | Clear |
| Dry | | | | | | |
| End @ | 1500 | | | | | |

Notes:

* Dry @ 8 gallons turn pump down to 0.5 gpm
Dry @ 10 gallons Let stand (recover) for ≈ 3 hours
Pumped Dry and allowed to Recover 3 times.

Well Developers Signature: [signature]

**FIGURE 9**

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.



DCMSC 83

# Well Development Record

Well No.: OW-627a

| | | |
|---|---|---|
| Project No.: 6234-06-3534S | Logged By: C. Bruce | |
| Client Name: Bechtel | Project Name: SCE & G Col Project | Checked By: MFC |
| Well Installation Date: 6/7/06 | Start Date: 6/09 | Finish Date: 6/10/06 |
| Well Development Date: 6/09/06 | Start Time: 1130 | Finish Time: 1600 |

Initial Water Level (ft.): 14.9 6/10/06 GW @ 80.1 BTOC

Water Level during **Initial** Pumping/Purging (ft).: 14.9 (6/9/06) 80.1 6/10/06

Water Level at **Termination** of Pumping/Purging (ft).: Dry.

Weather: Clear Warm

Height of Water Column: _____ (ft.)

_____ 0.16 gal./ft. (2 in.)
x _____ 0.65 gal./ft. (4 in.)
_____ 1.5 gal./ft. (6 in.)
_____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

| Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|
| 1 | 1130 | NA | NA | NA | 0.5 (Bail) | Turbid |
| 15 | 1340 | NA | NA | NA | 0.5 pump | Cloudy |
| 15.3 | 16:00 | NA | NA | NA | 0.01 | Cloudy |
| 3 gallons | 16:00 | NA | NA | NA | Bail | Clear to Mod Turbid |

dry
(2 gal) dry
End
Dry

Notes: surged pump several times during initial (15 volume) development, water ~~would be~~ was turbid but cleared up fast.
water level dropped to ≥84 feet with very slow recovery
Bailed 3 gallons on 6/10/06, Well going dry. 1st 1/2 gallon clear. rest Mod. Turbid

Well Developers Signature: [signature]

**FIGURE 9**

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

DCN 5083

# Well Development Record

Well No.: OW-627b

| | | |
|---|---|---|
| Project No.: 6234-06-35345 | Logged By: C Bruce | |
| Client Name: Bechtel | Project Name: SCE&C Col Project | Checked By: MFC |
| Well Installation Date: 5/22/06 | Start Date: 6/09/06 | Finish Date: 6/10/06 |
| Well Development Date: 6/09/06 | Start Time: 1415 | Finish Time: 1620 |
| Initial Water Level (ft.): 12.55 / 26.25 (6/10/06) TD 58.6 | | |
| Water Level during **Initial** Pumping/Purging (ft).: | | |
| Water Level at **Termination** of Pumping/Purging (ft).: 43.1 6/10/06 | | |
| Weather: Clear warm | | |

Height of Water Column: 46.05 (ft.)

✓ 0.16 gal./ft. (2 in.)
x ____ 0.65 gal./ft. (4 in.)
____ 1.5 gal./ft. (6 in.)

46.05 gal./ft. ( 2" in.) = 7.368 Well Volume (gal./ft.)

| | Number of Well Volumes: | Time: | Temperature: | pH: | Conductivity: | Approximate Pumping Rate (gal./min.): | Turbidity (NTU's): |
|---|---|---|---|---|---|---|---|
| | 1 | 14:15 | NA | NA | NA | 0.5 (Bail) | Turbid |
| dry | 2 | 14:30 | NA | NA | NA | 0.25 | Turbid |
| dry | 3 | 15:30 | NA | NA | NA | 0.25 | Turbid |
| | 3.2 (1 gal) | | NA | NA | NA | 0.0 | Turbid |
| 6/10 | 5 gallons | 1620 | NA | NA | NA | Bail | Clear to cloudy |

Notes:

Well Developers Signature: [signature]

FIGURE 9

MACTEC Engineering and Consulting, Inc.

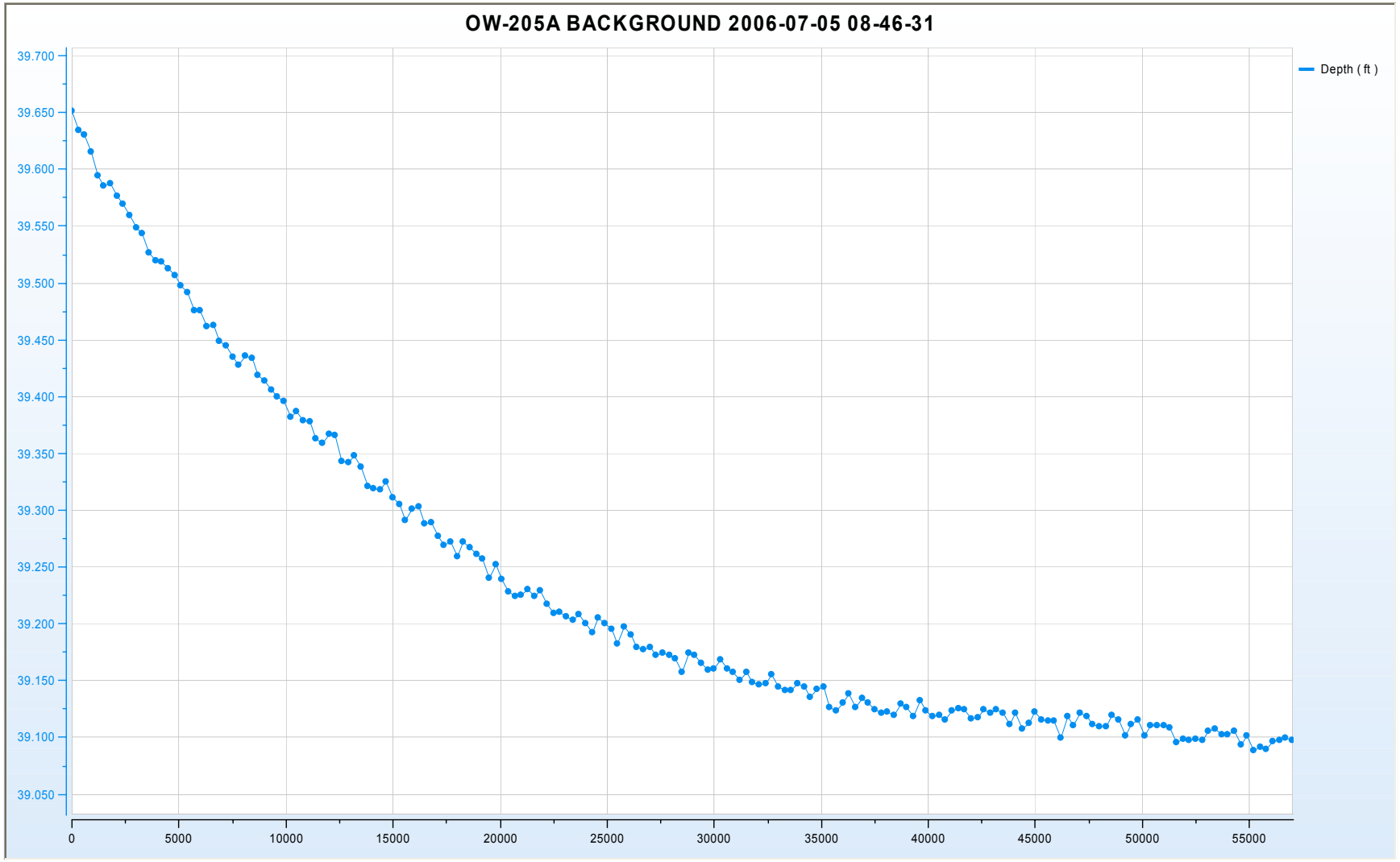
Graphics\Misc.\Forms

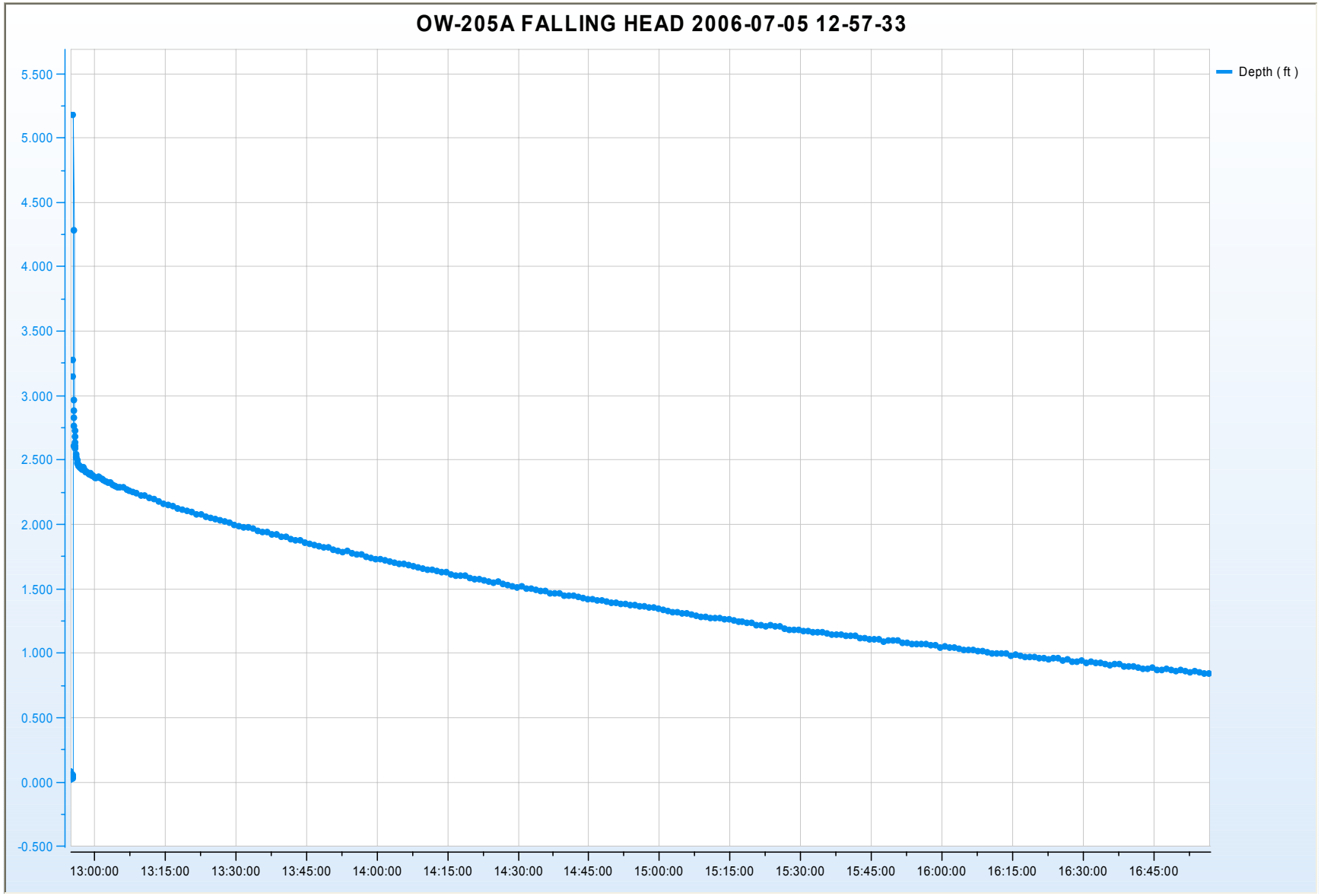
MFC 6/11/06
~~MFC~~
DCN 5083

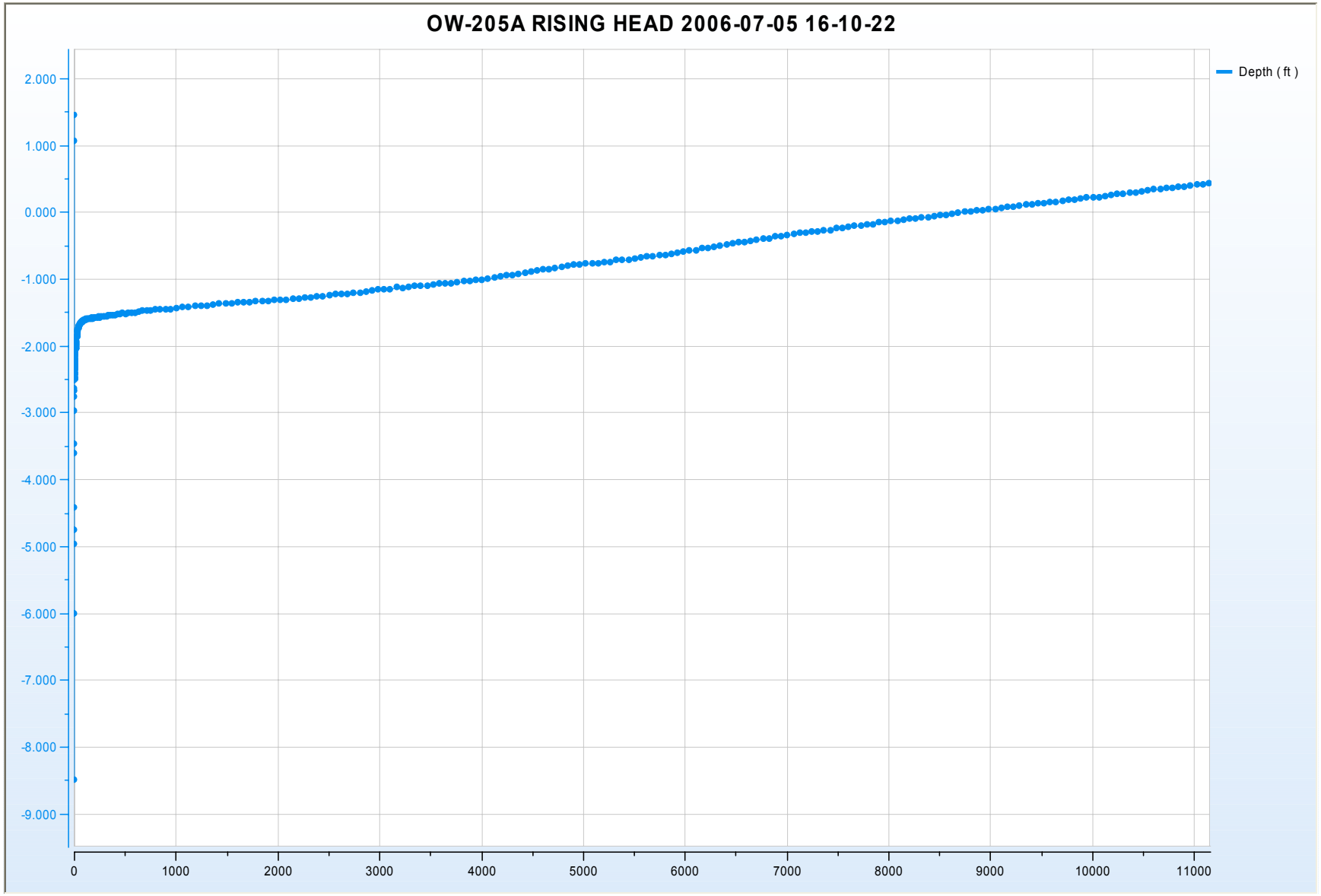
# Final Report

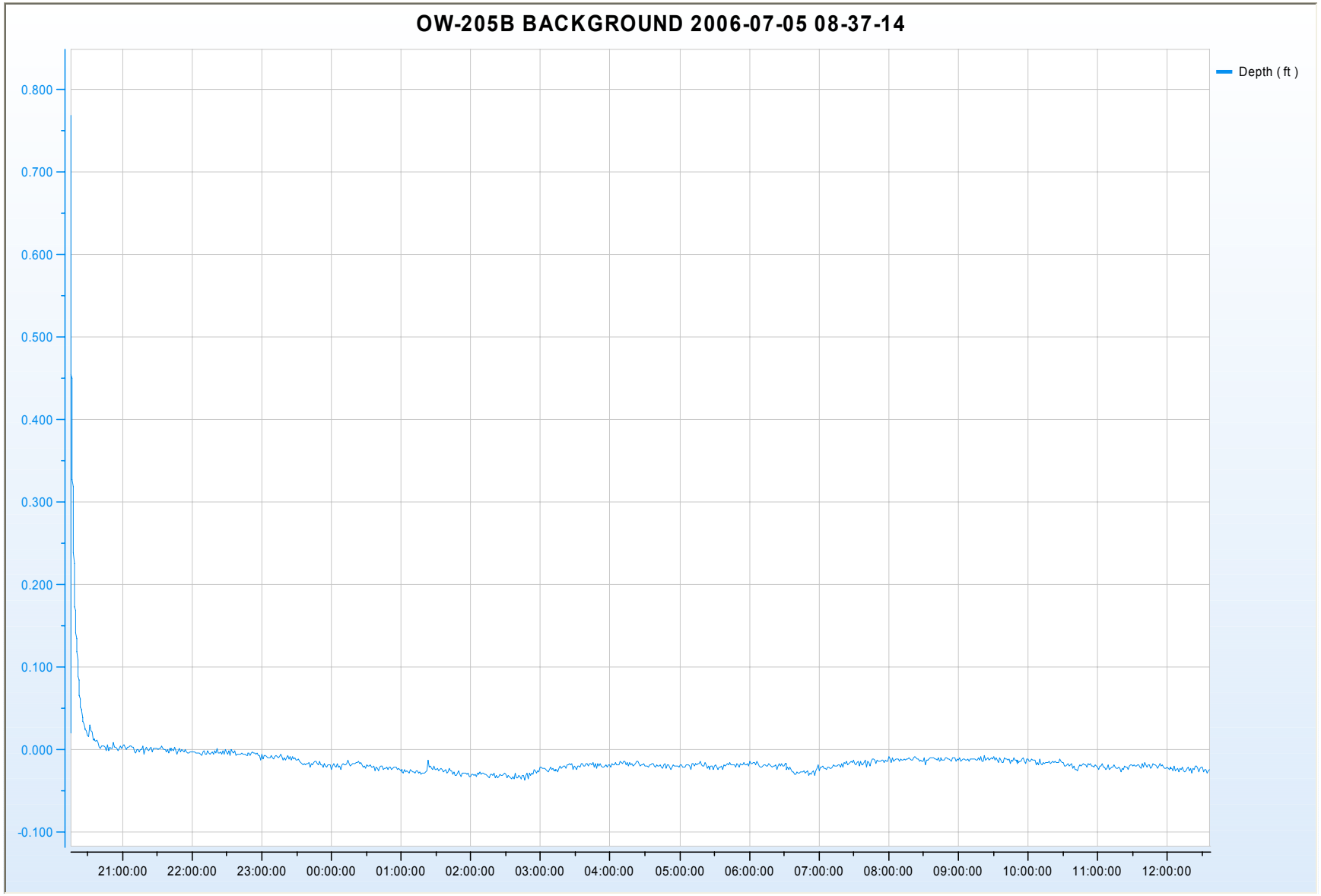
# Appendix C-3

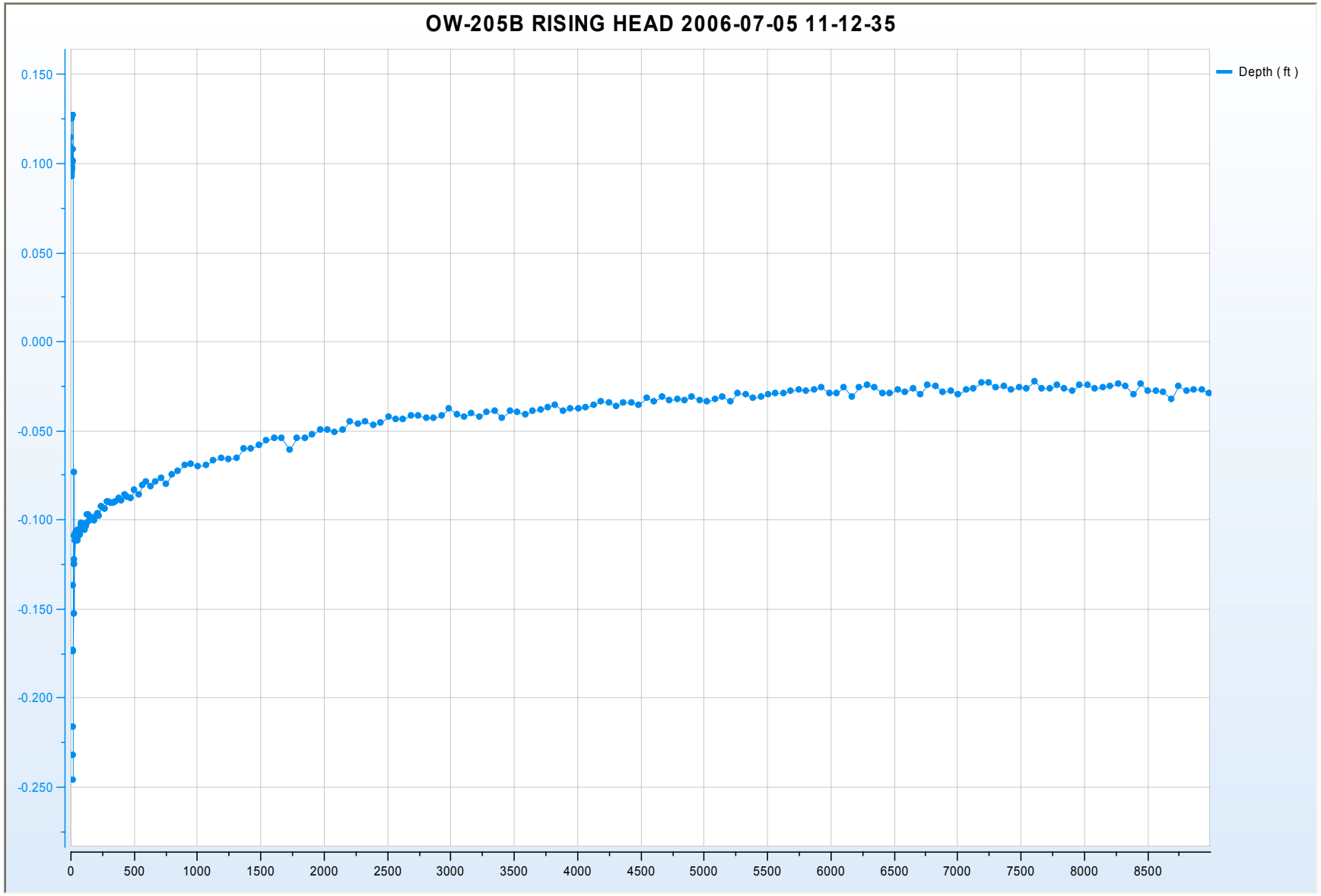
# Slug Test Charts

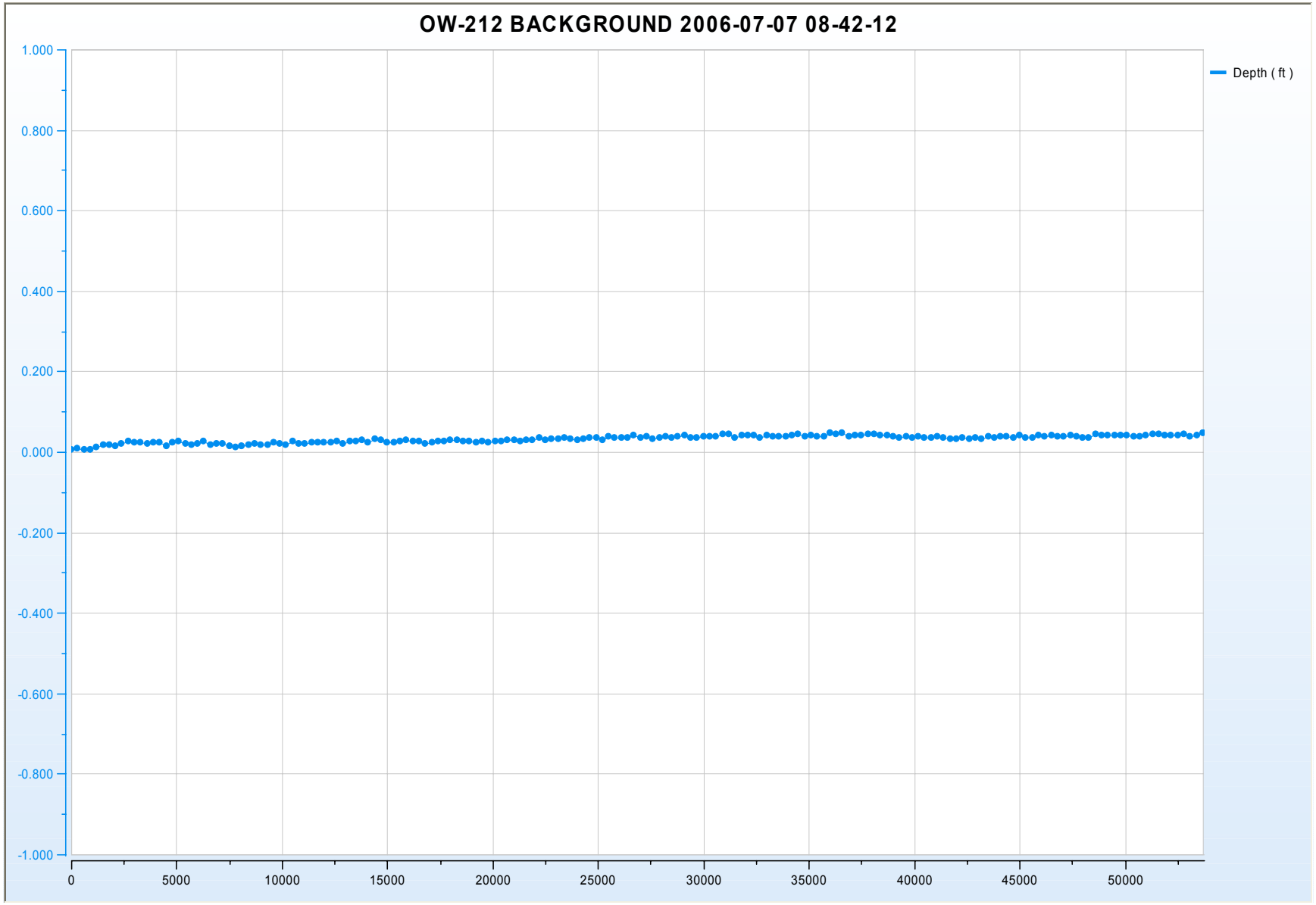

OW-205A BACKGROUND 2006-07-05 08-46-31
Depth ( ft )
39.700
39.650
39.600
39.550
39.500
39.450
39.400
39.350
39.300
39.250
39.200
39.150
39.100
39.050
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000

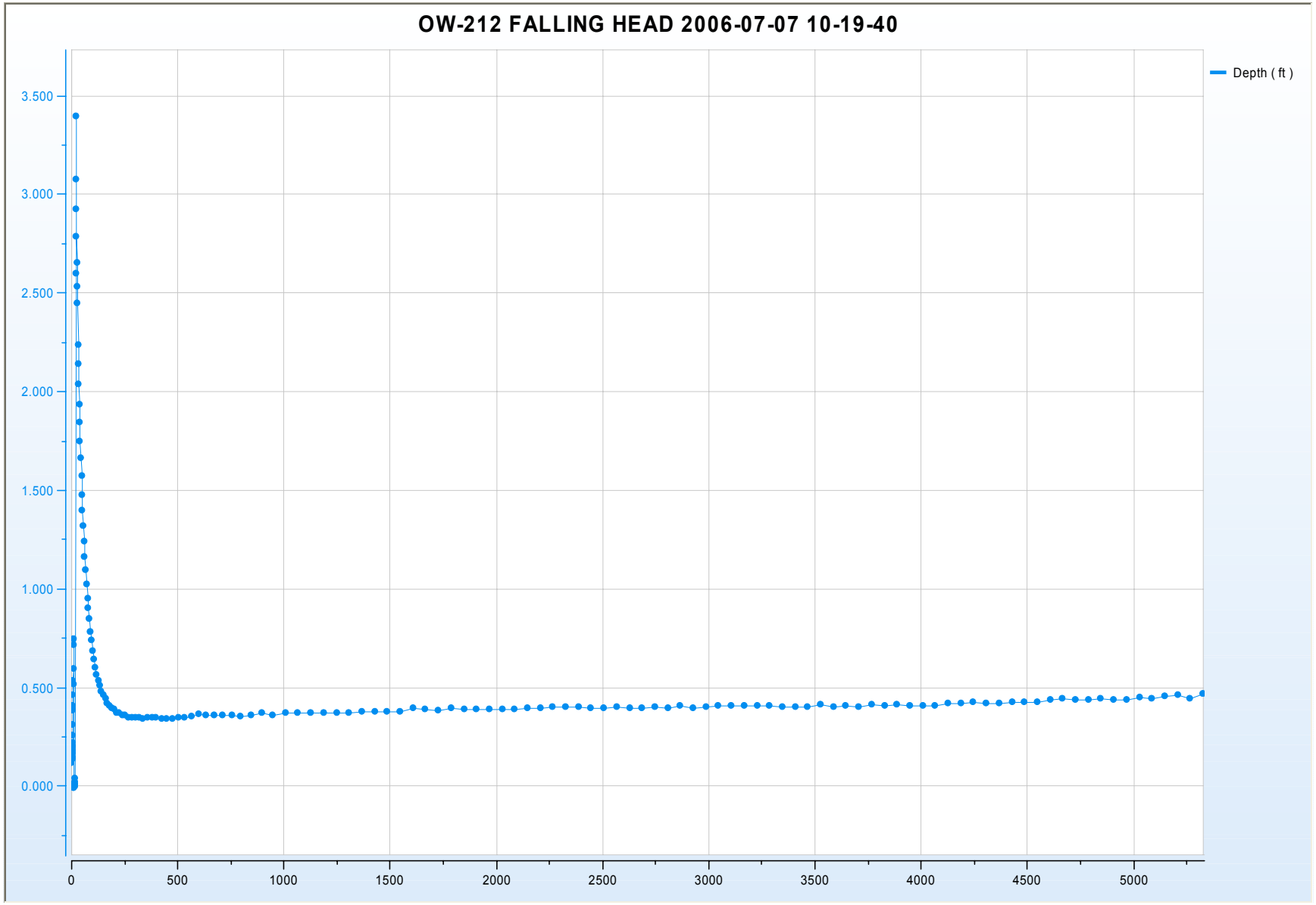

OW-205A FALLING HEAD 2006-07-05 12-57-33
Depth ( ft )
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
13:00:00
13:15:00
13:30:00
13:45:00
14:00:00
14:15:00
14:30:00
14:45:00
15:00:00
15:15:00
15:30:00
15:45:00
16:00:00
16:15:00
16:30:00
16:45:00

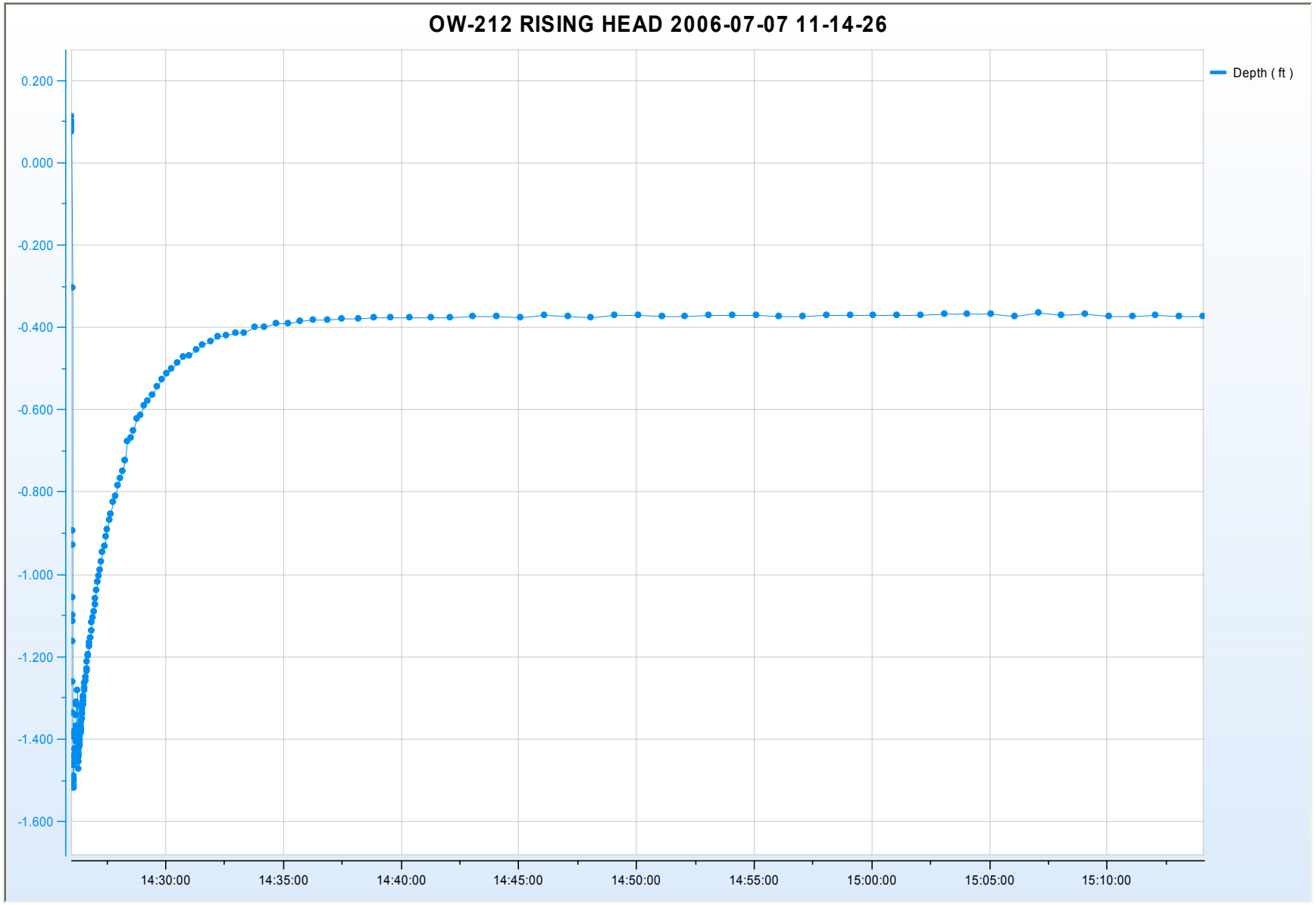

OW-205A RISING HEAD 2006-07-05 16-10-22
Depth ( ft )
2.000
1.000
0.000
-1.000
-2.000
-3.000
-4.000
-5.000
-6.000
-7.000
-8.000
-9.000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000

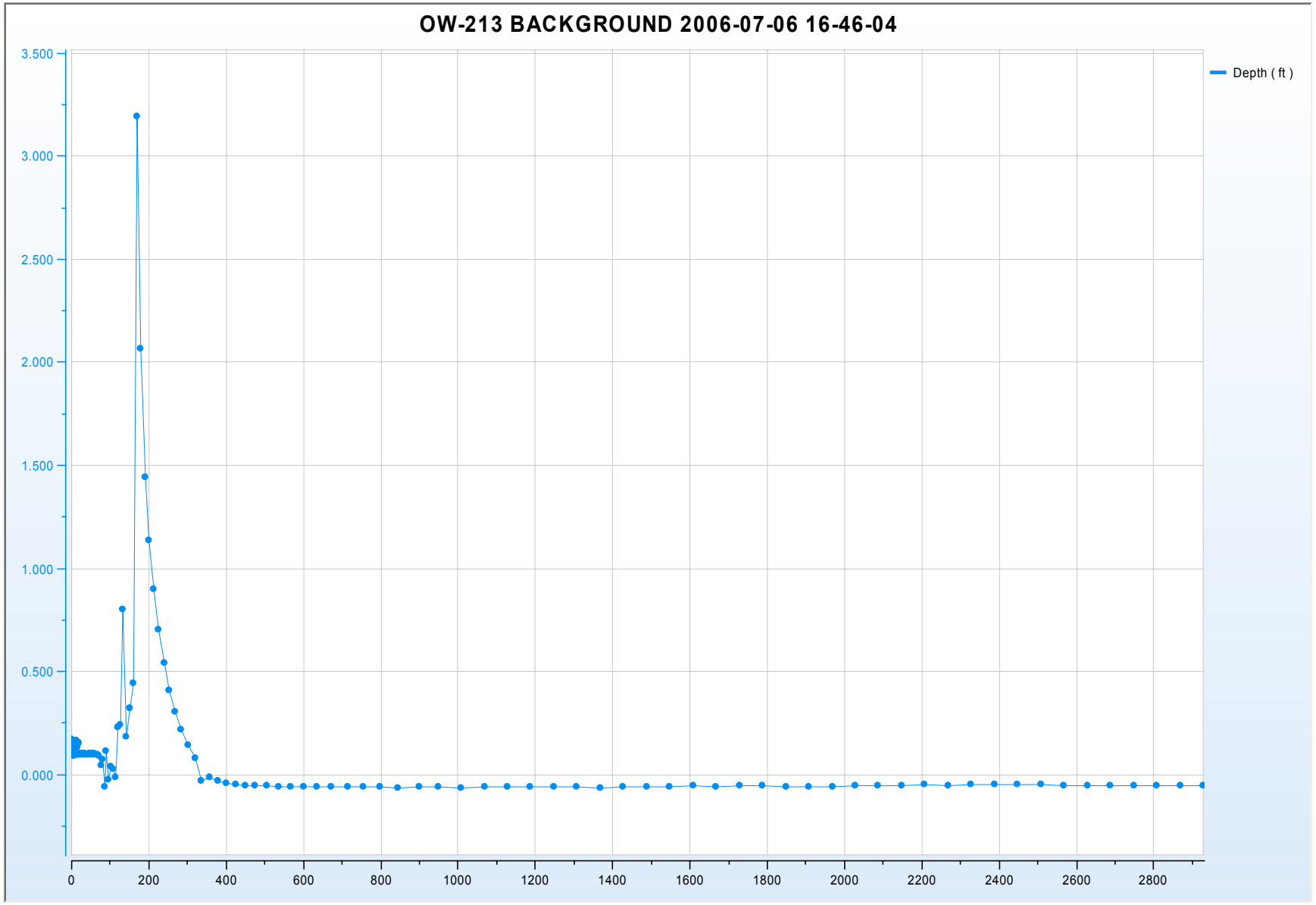

OW-205B BACKGROUND 2006-07-05 08-37-14
Depth ( ft )
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
21:00:00
22:00:00
23:00:00
00:00:00
01:00:00
02:00:00
03:00:00
04:00:00
05:00:00
06:00:00
07:00:00
08:00:00
09:00:00
10:00:00
11:00:00
12:00:00

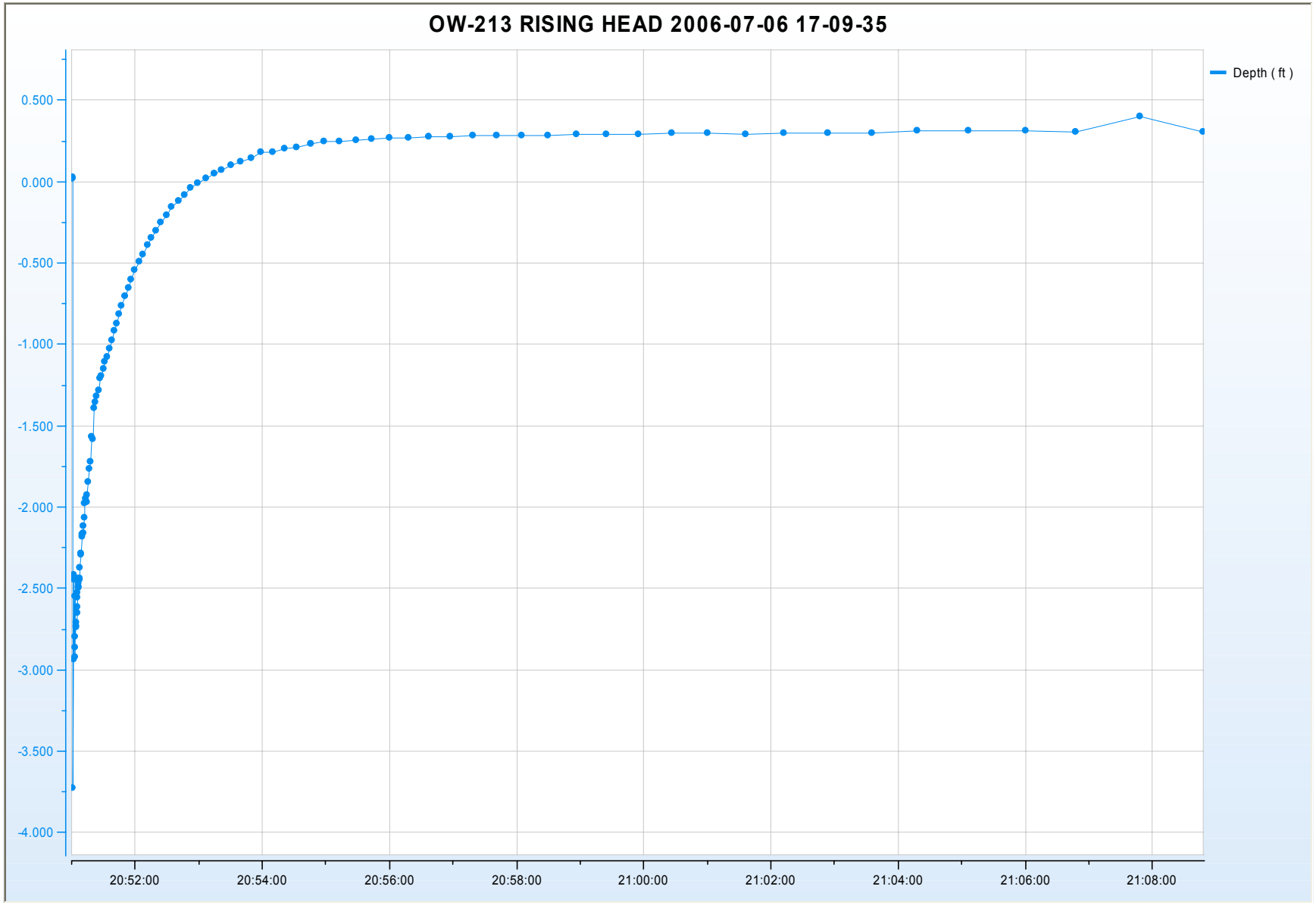

OW-205B RISING HEAD 2006-07-05 11-12-35
Depth ( ft )
0.150
0.100
0.050
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500

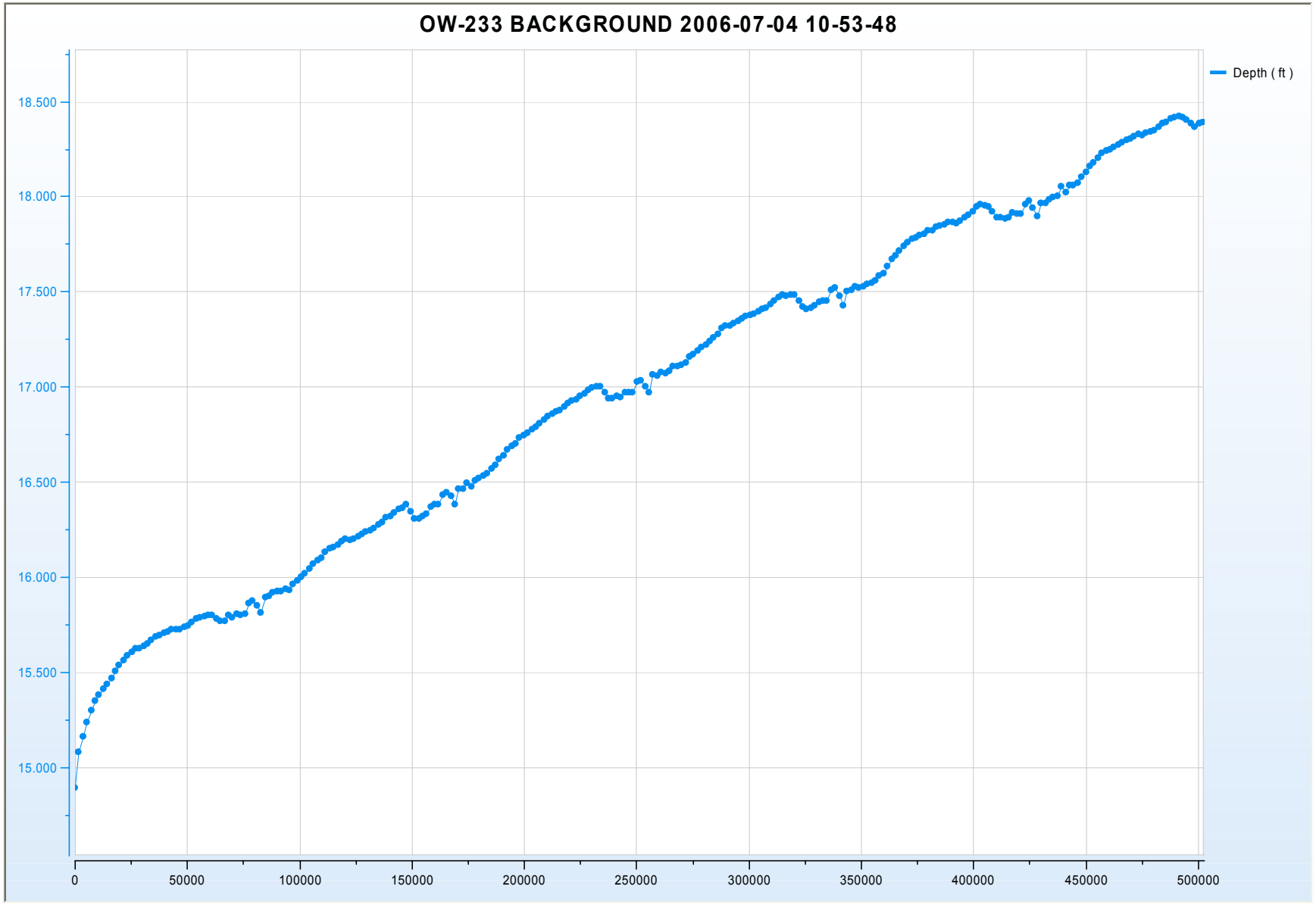

OW-212 BACKGROUND 2006-07-07 08-42-12
Depth ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000

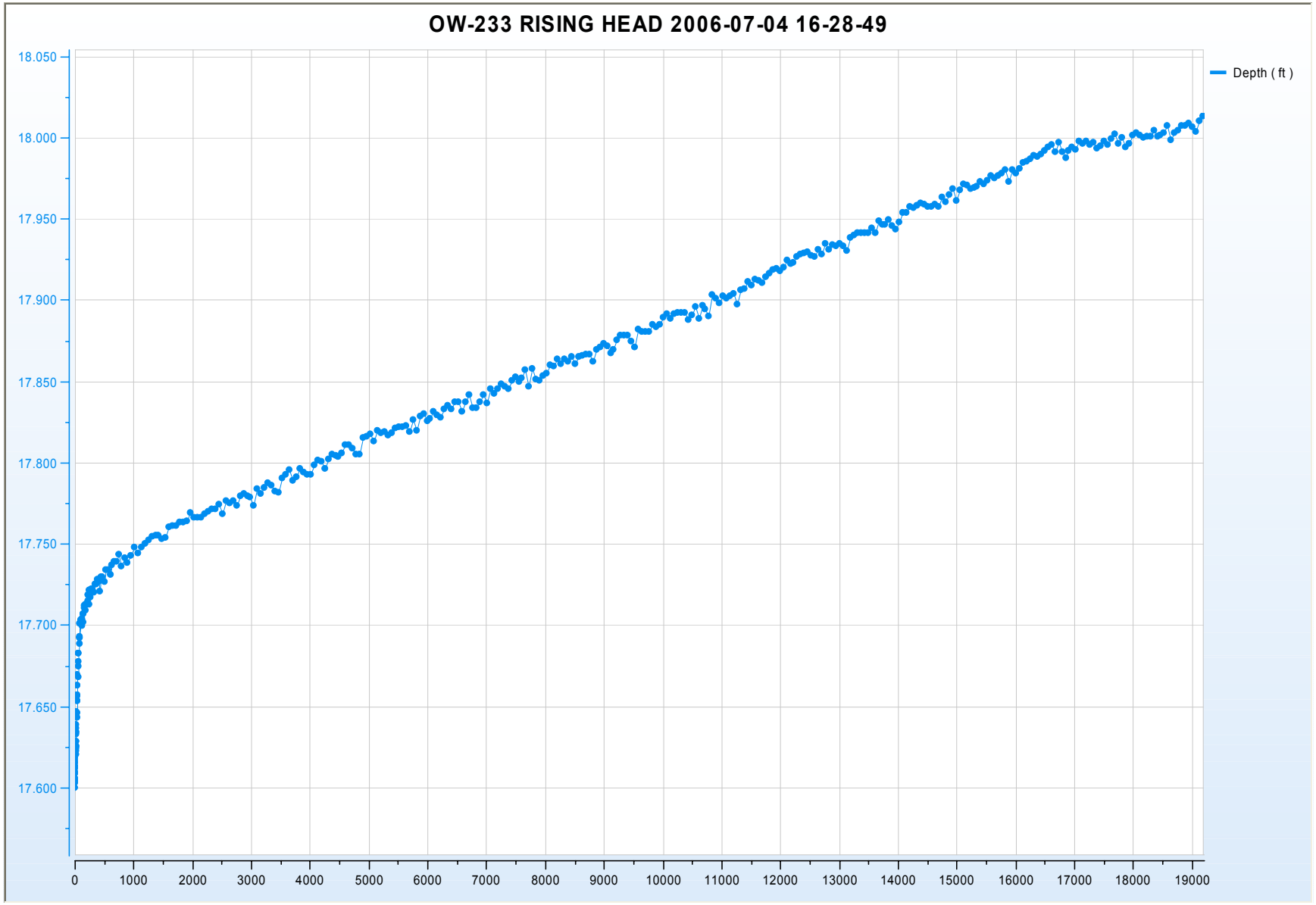

OW-212 FALLING HEAD 2006-07-07 10-19-40
Depth ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

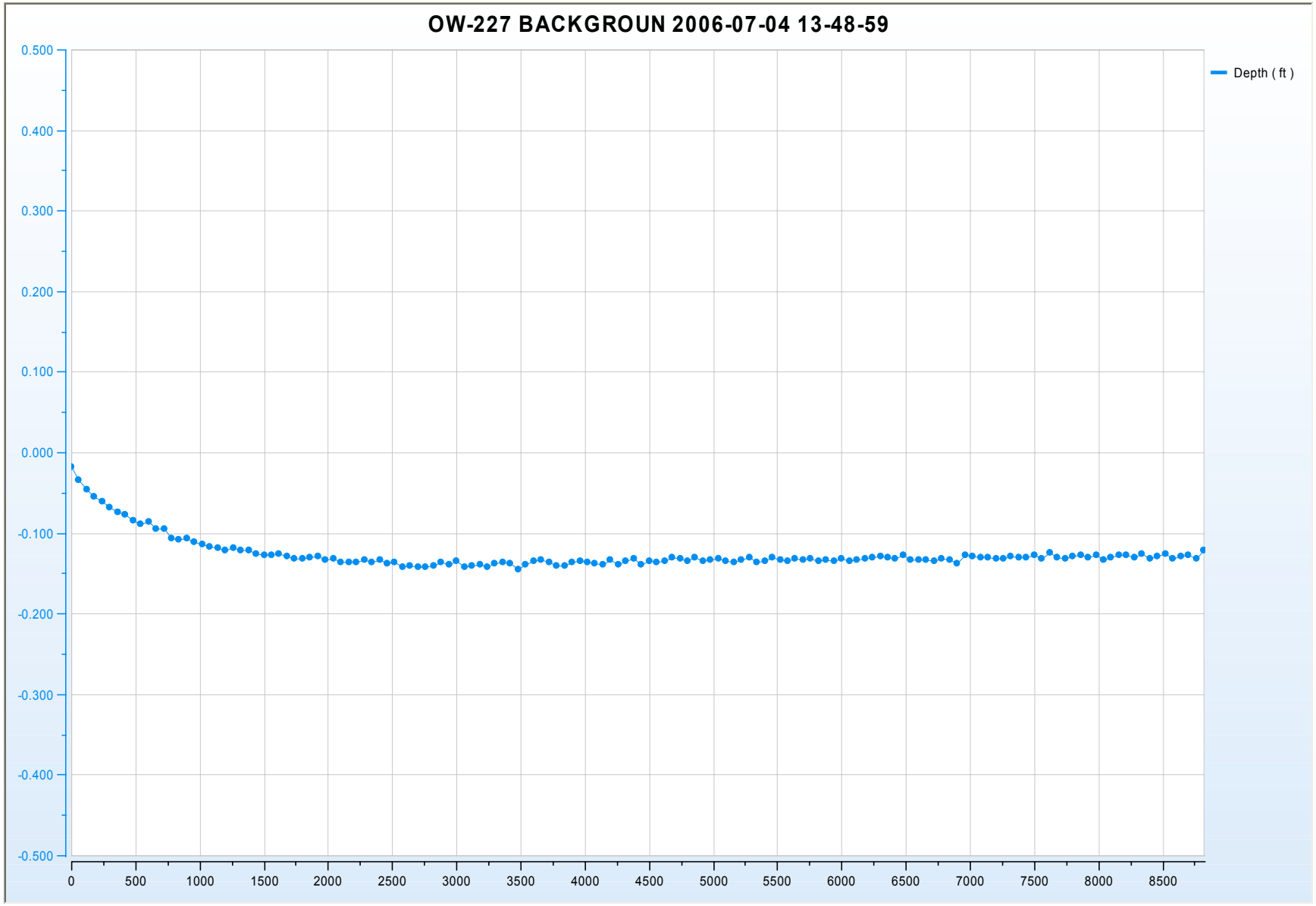

OW-212 RISING HEAD 2006-07-07 11-14-26
Depth ( ft )
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
-1.200
-1.400
-1.600
14:30:00
14:35:00
14:40:00
14:45:00
14:50:00
14:55:00
15:00:00
15:05:00
15:10:00

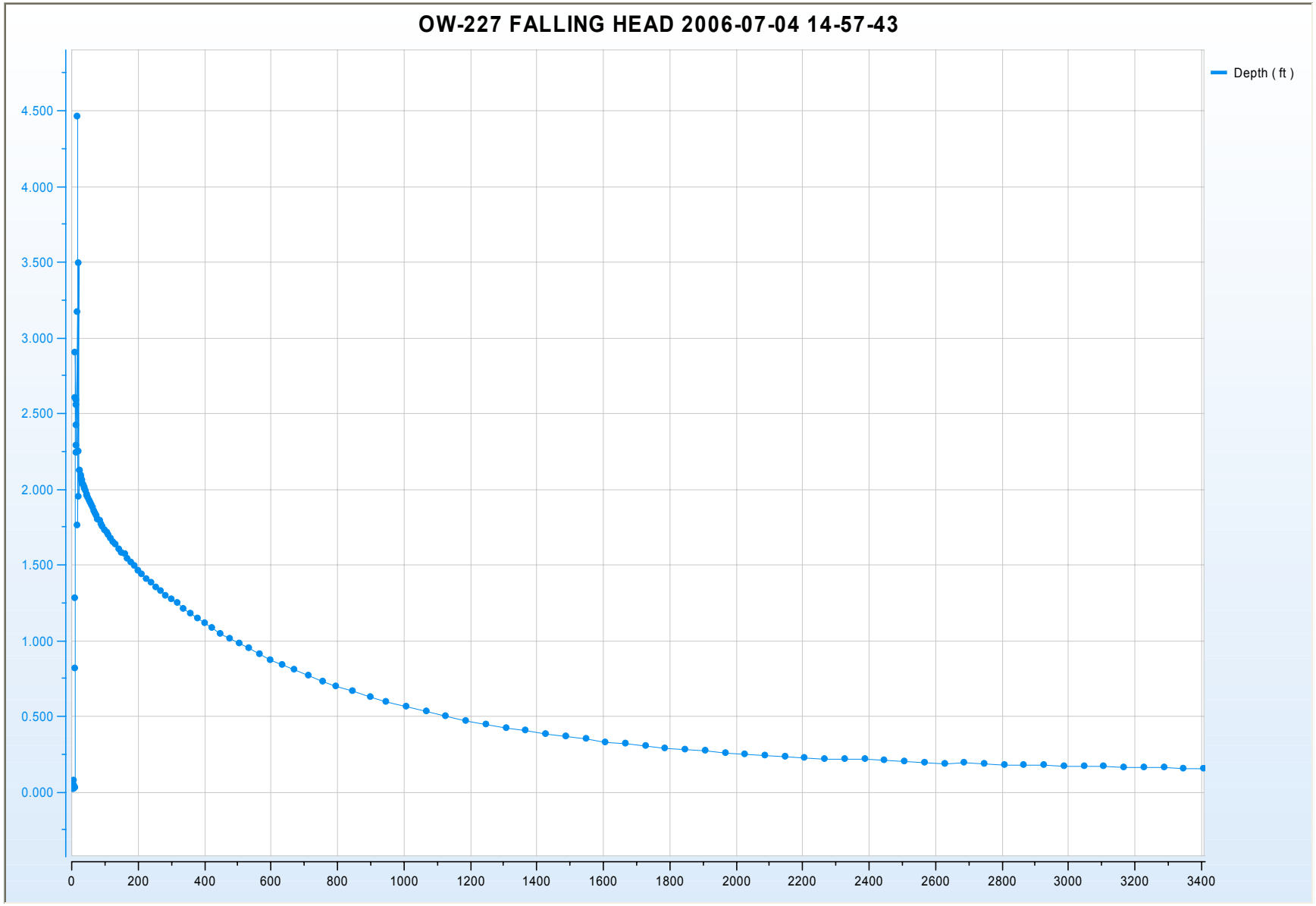

OW-213 BACKGROUND 2006-07-06 16-46-04
Depth ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800

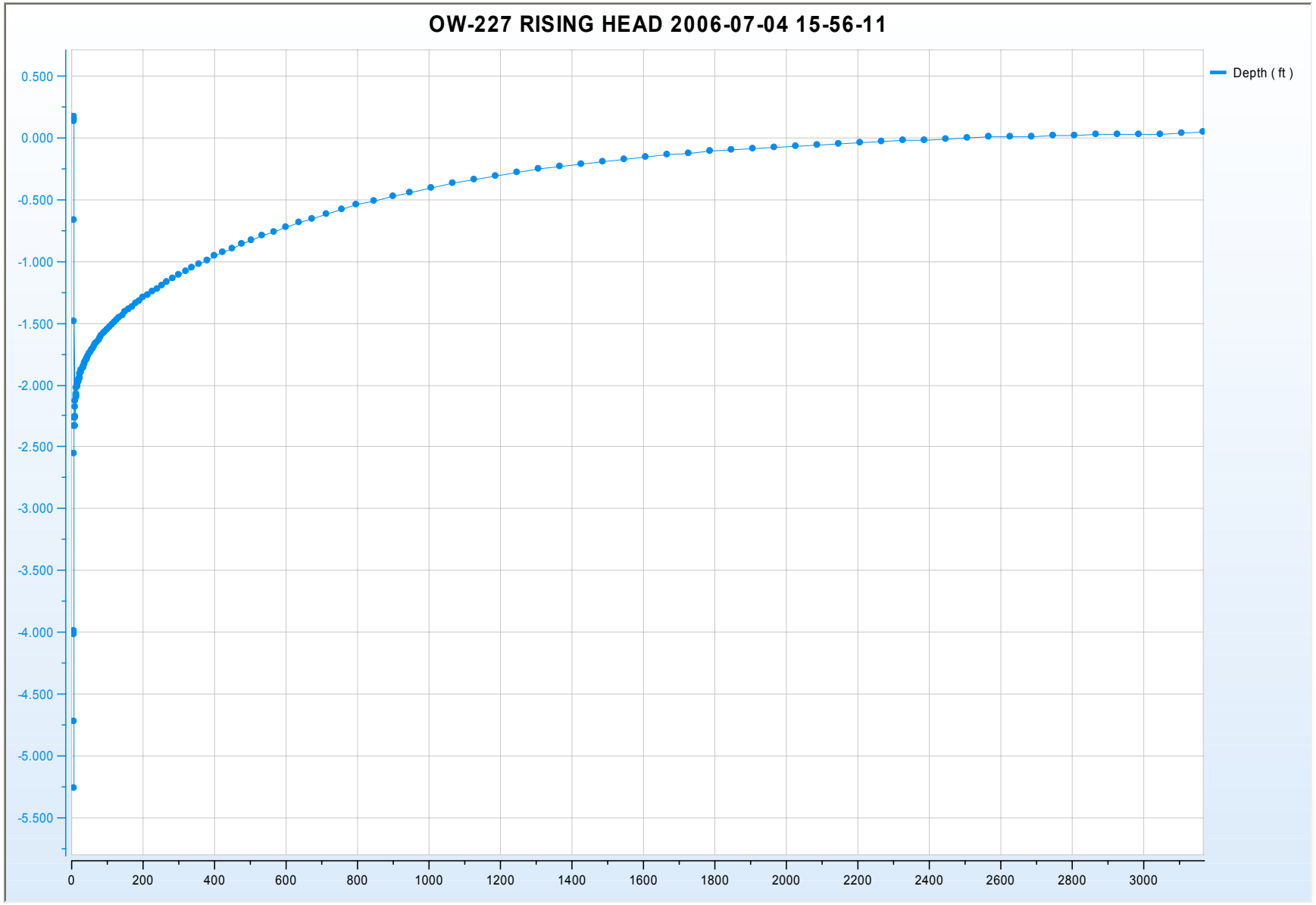

OW-213 RISING HEAD 2006-07-06 17-09-35
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
20:52:00
20:54:00
20:56:00
20:58:00
21:00:00
21:02:00
21:04:00
21:06:00
21:08:00

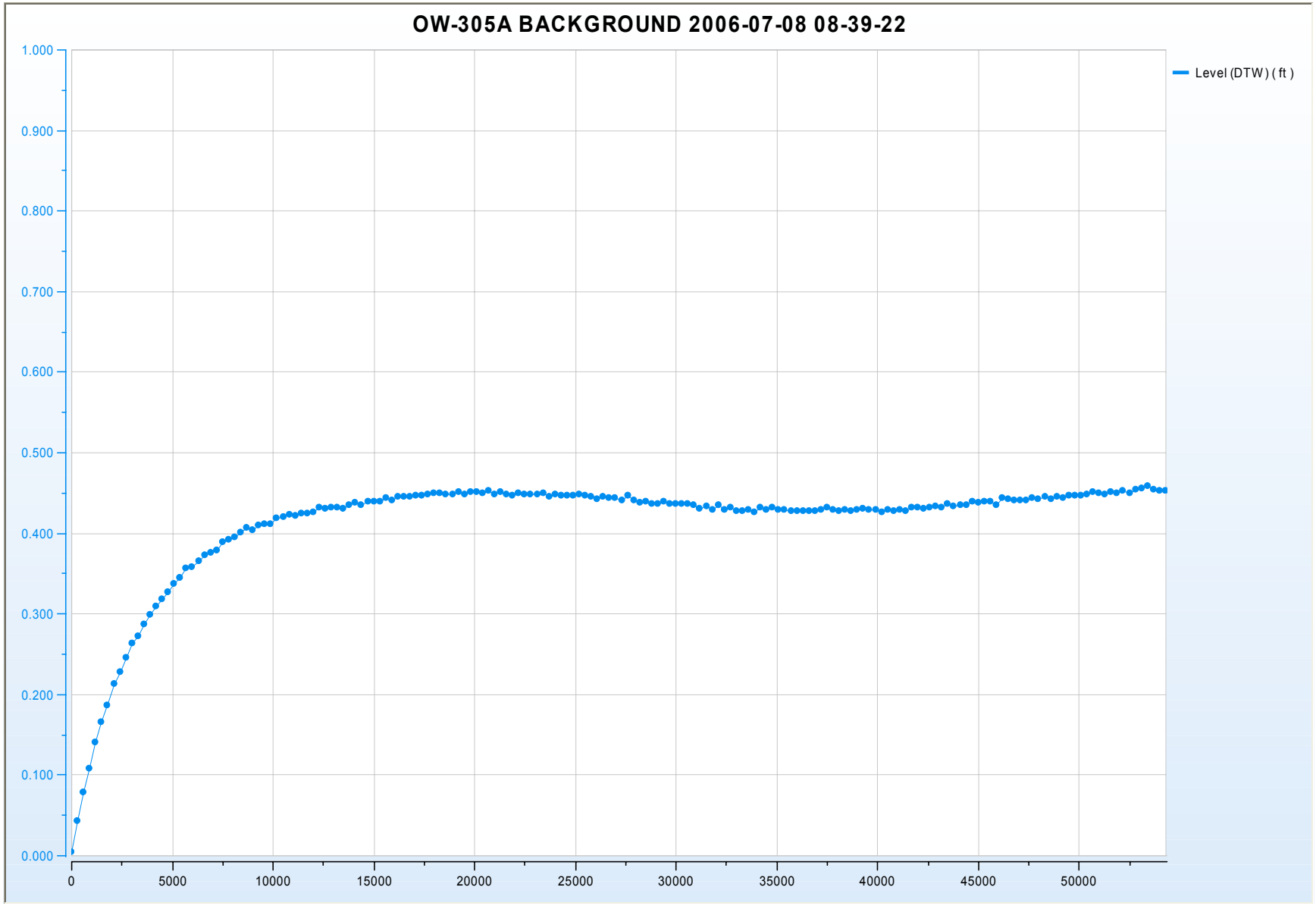

OW-233 BACKGROUND 2006-07-04 10-53-48
Depth ( ft )
18.500
18.000
17.500
17.000
16.500
16.000
15.500
15.000
0
50000
100000
150000
200000
250000
300000
350000
400000
450000
500000

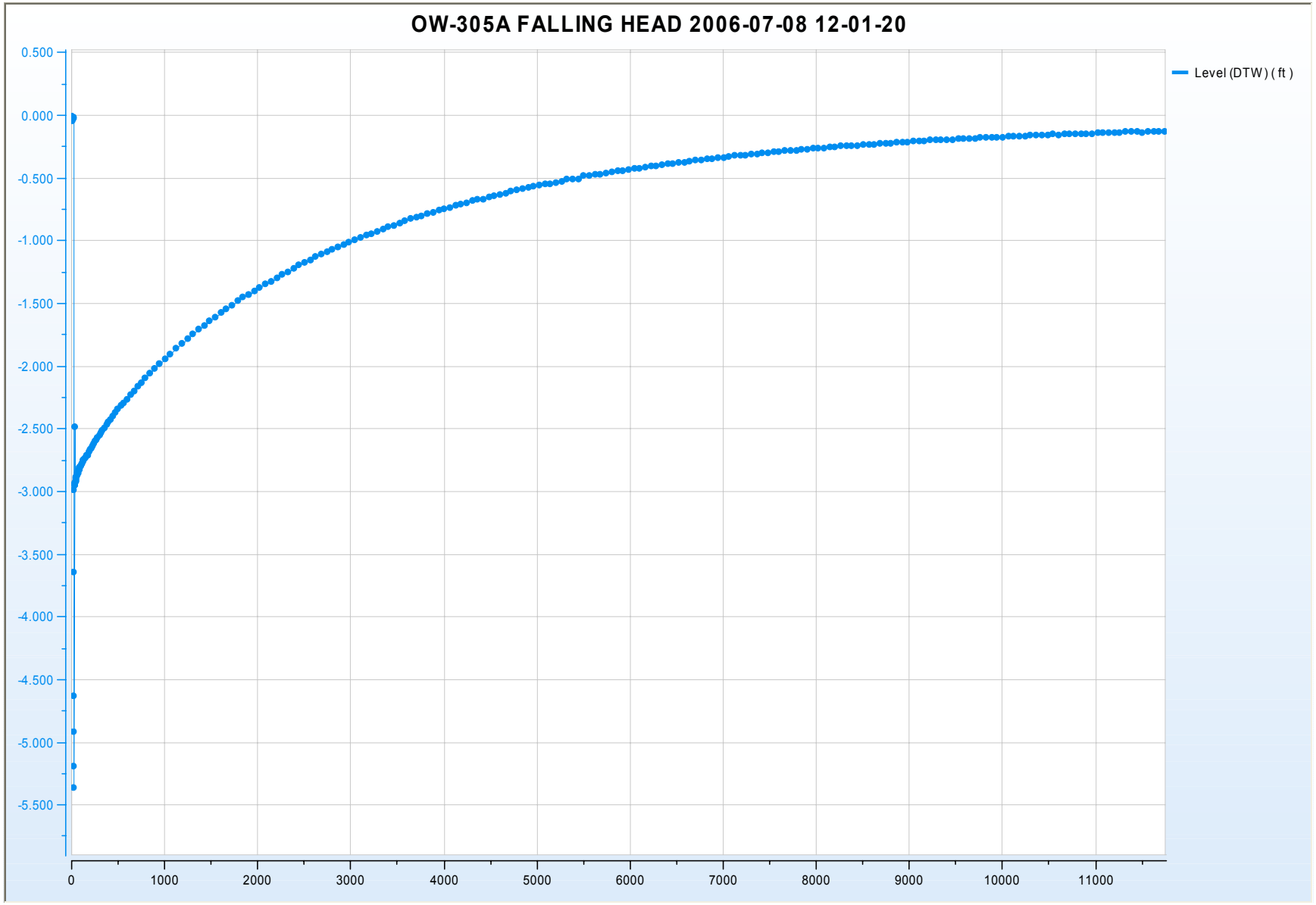

OW-233 RISING HEAD 2006-07-04 16-28-49
Depth ( ft )
18.050
18.000
17.950
17.900
17.850
17.800
17.750
17.700
17.650
17.600
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000

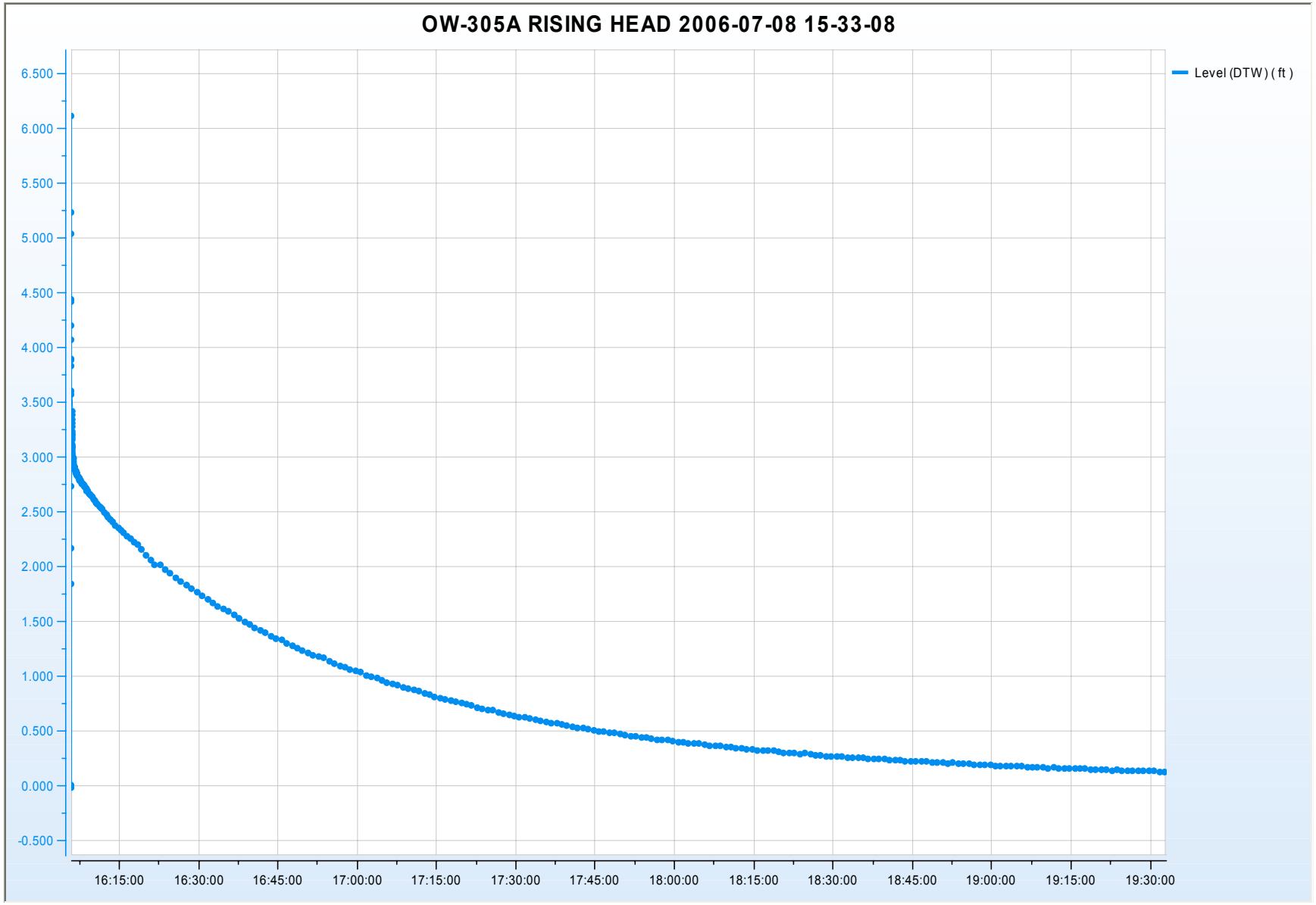

OW-227 BACKGROUN 2006-07-04 13-48-59
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500

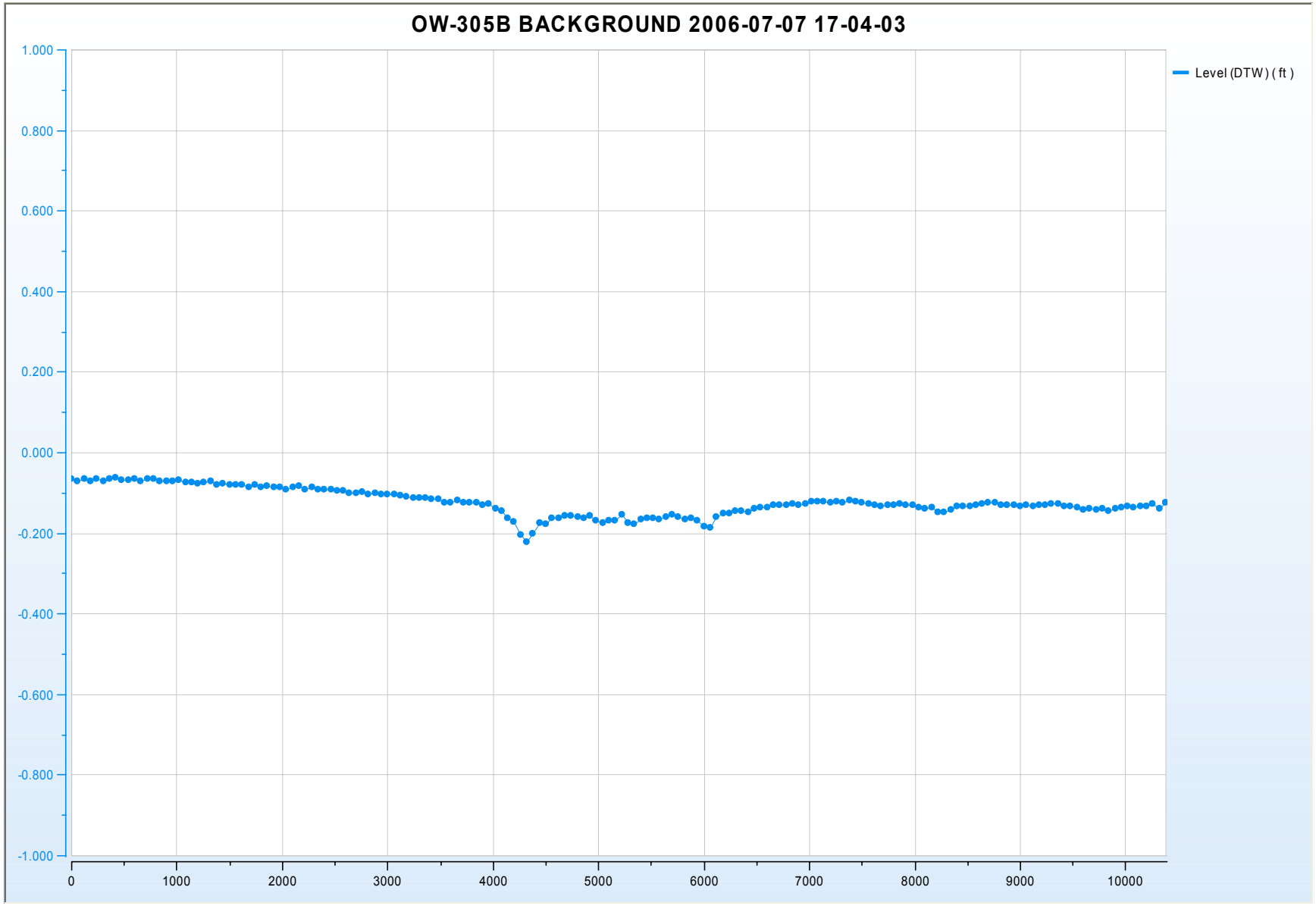

OW-227 FALLING HEAD 2006-07-04 14-57-43
Depth ( ft )
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400

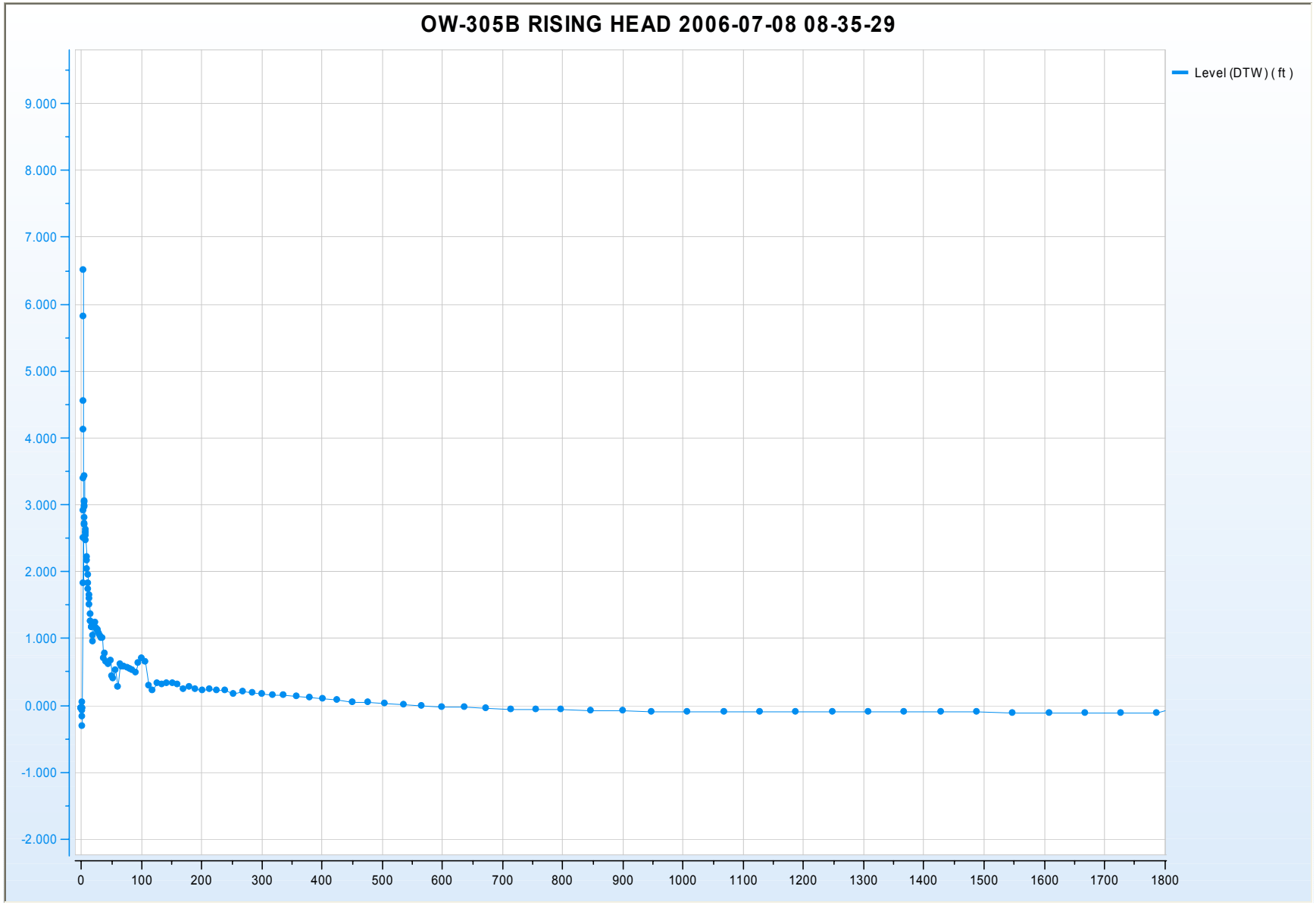

OW-227 RISING HEAD 2006-07-04 15-56-11
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000

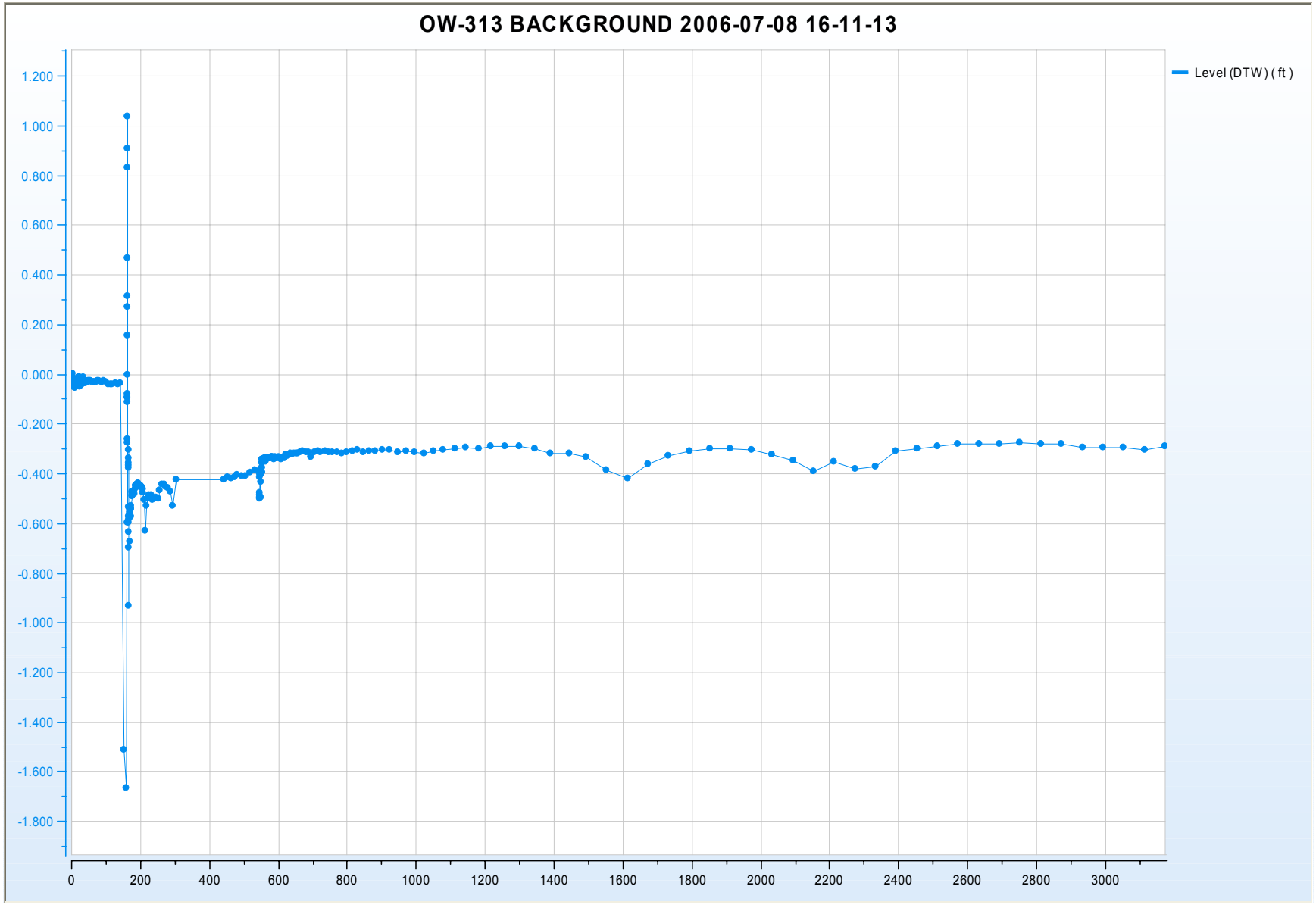

OW-305A BACKGROUND 2006-07-08 08-39-22
Level (DTW) ( ft )
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000

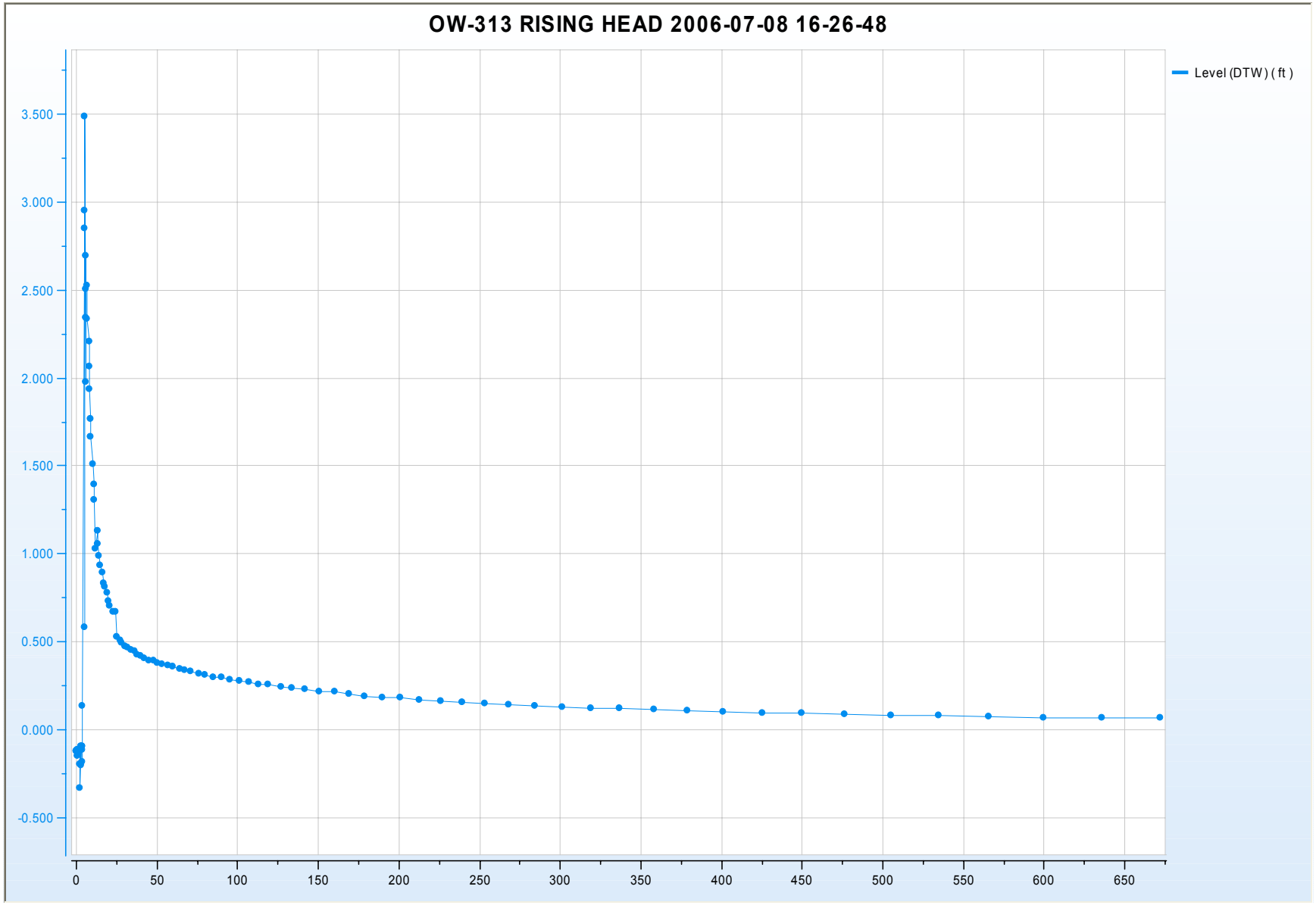

OW-305A FALLING HEAD 2006-07-08 12-01-20
Level (DTW) ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000

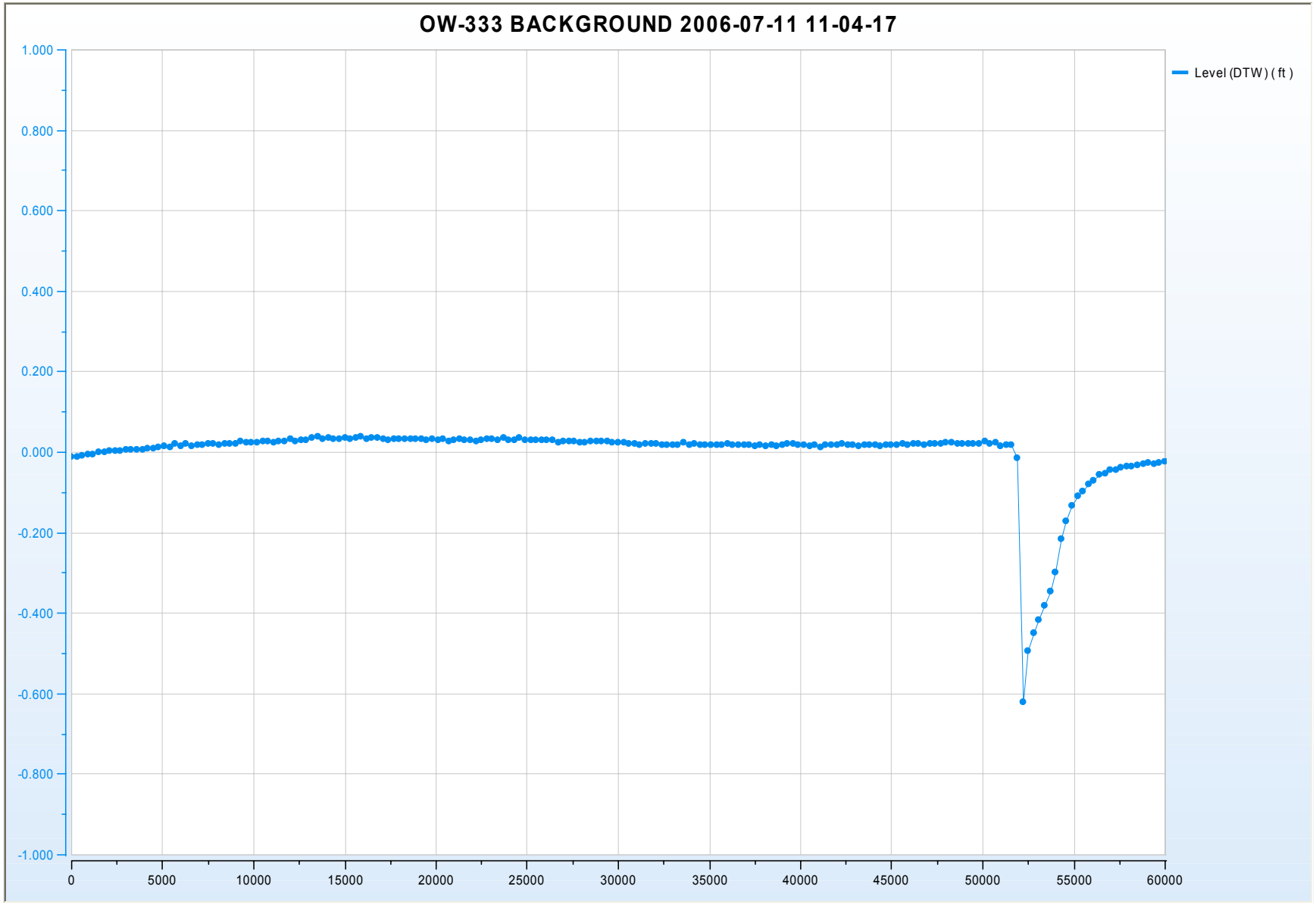

OW-305A RISING HEAD 2006-07-08 15-33-08
Level (DTW) ( ft )
6.500
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
16:15:00
16:30:00
16:45:00
17:00:00
17:15:00
17:30:00
17:45:00
18:00:00
18:15:00
18:30:00
18:45:00
19:00:00
19:15:00
19:30:00

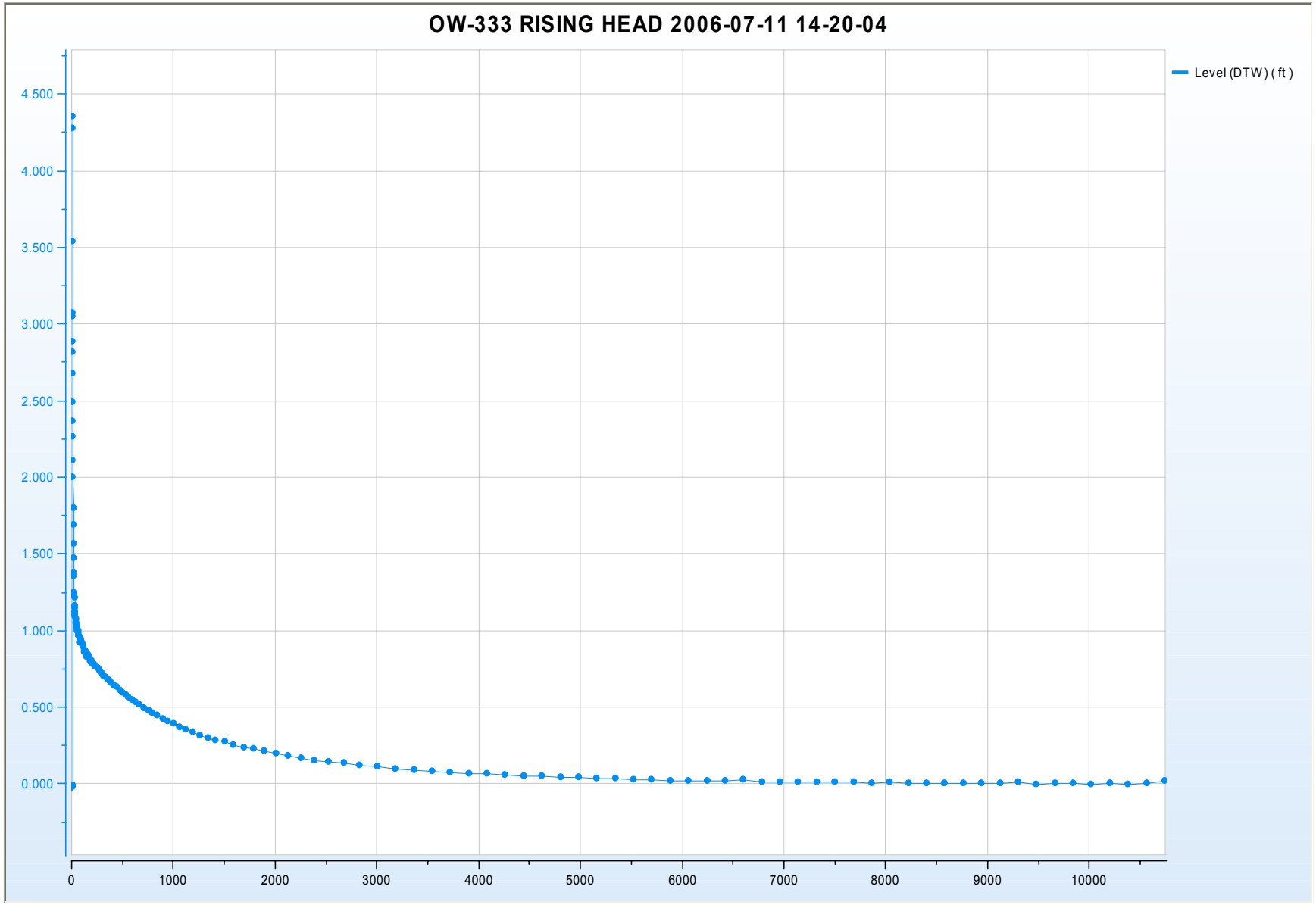

OW-305B BACKGROUND 2006-07-07 17-04-03
Level (DTW) ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

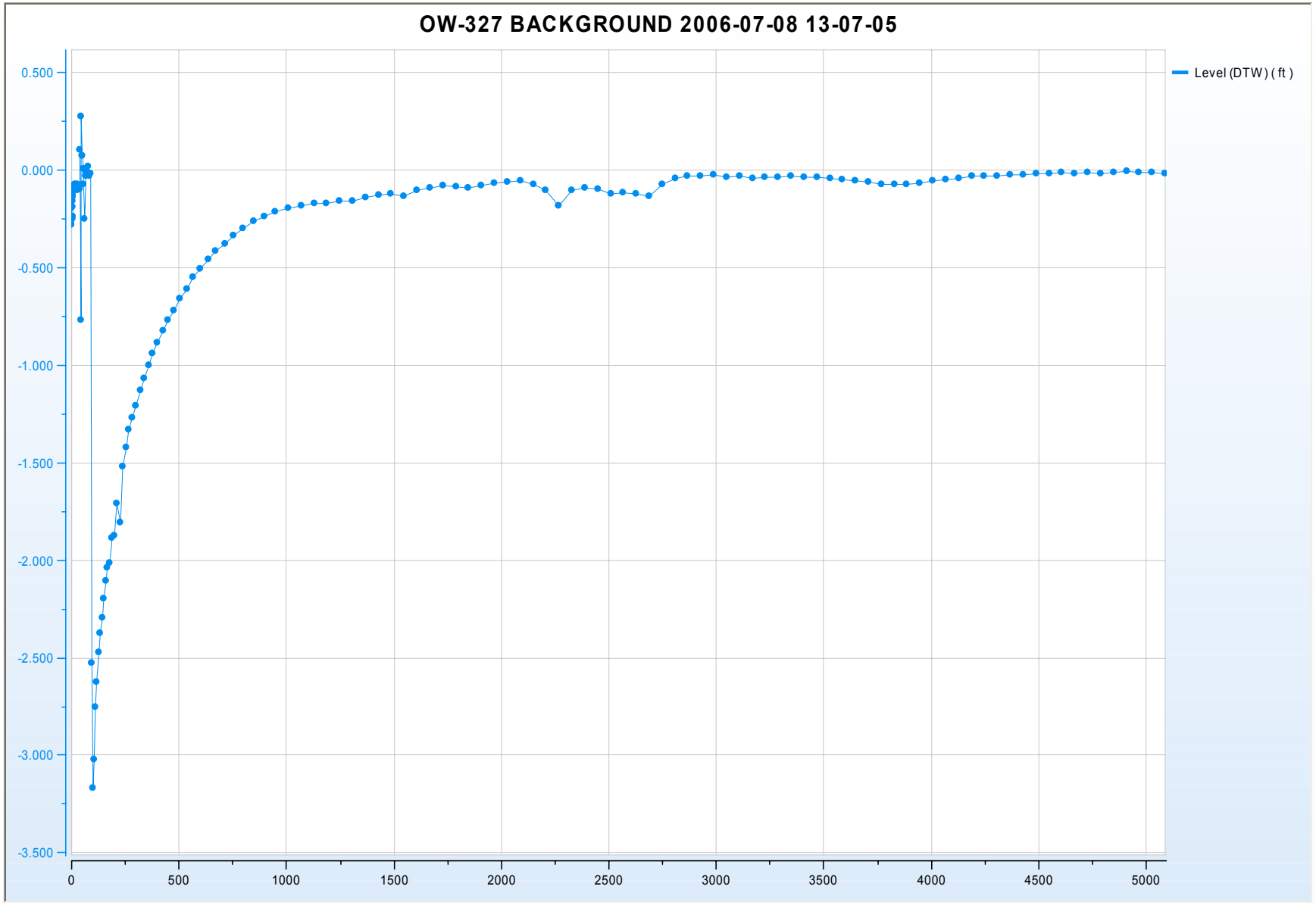

OW-305B RISING HEAD 2006-07-08 08-35-29
Level (DTW) ( ft )
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
-1.000
-2.000
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800

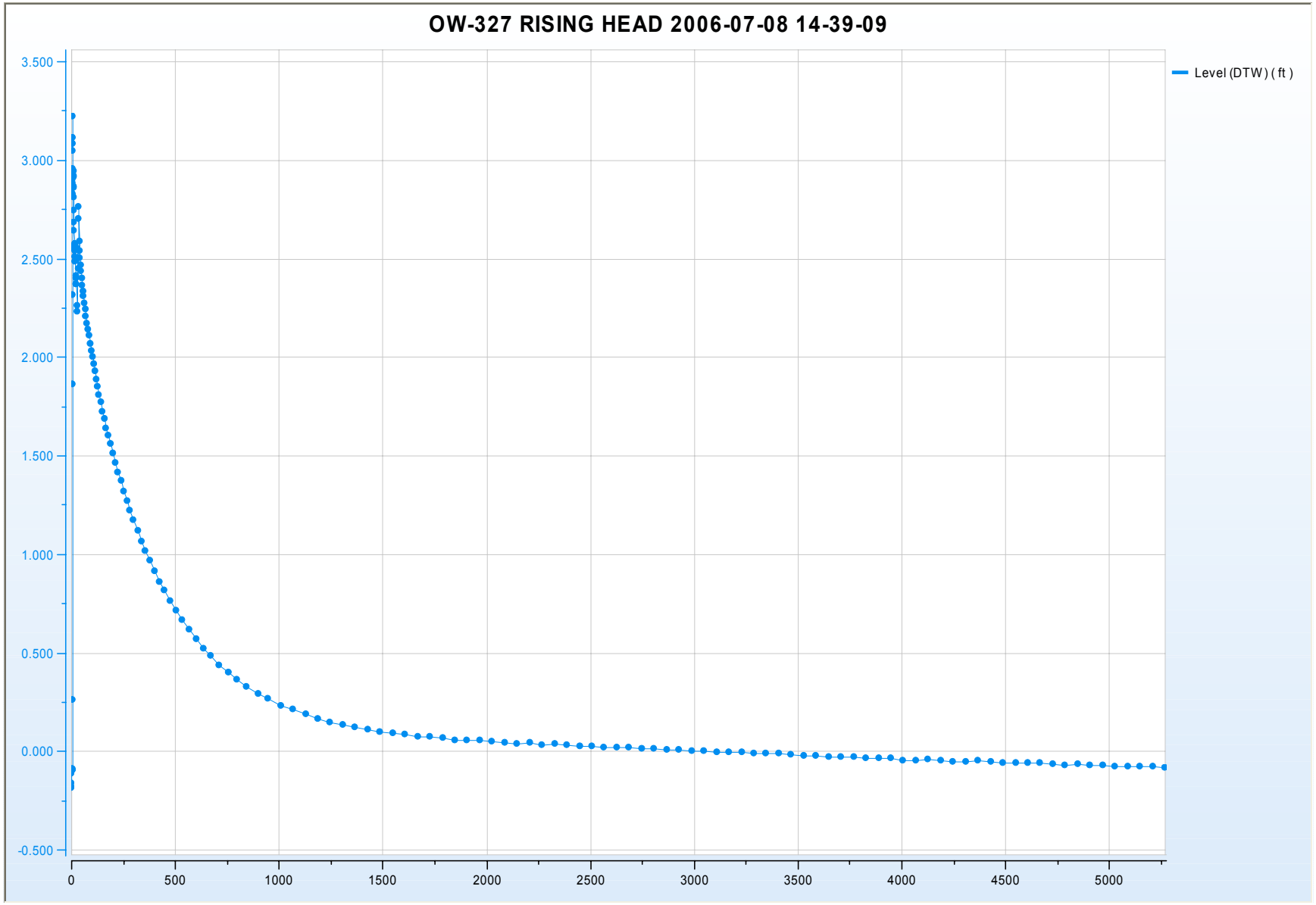

OW-313 BACKGROUND 2006-07-08 16-11-13
Level (DTW) ( ft )
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
-1.200
-1.400
-1.600
-1.800
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000

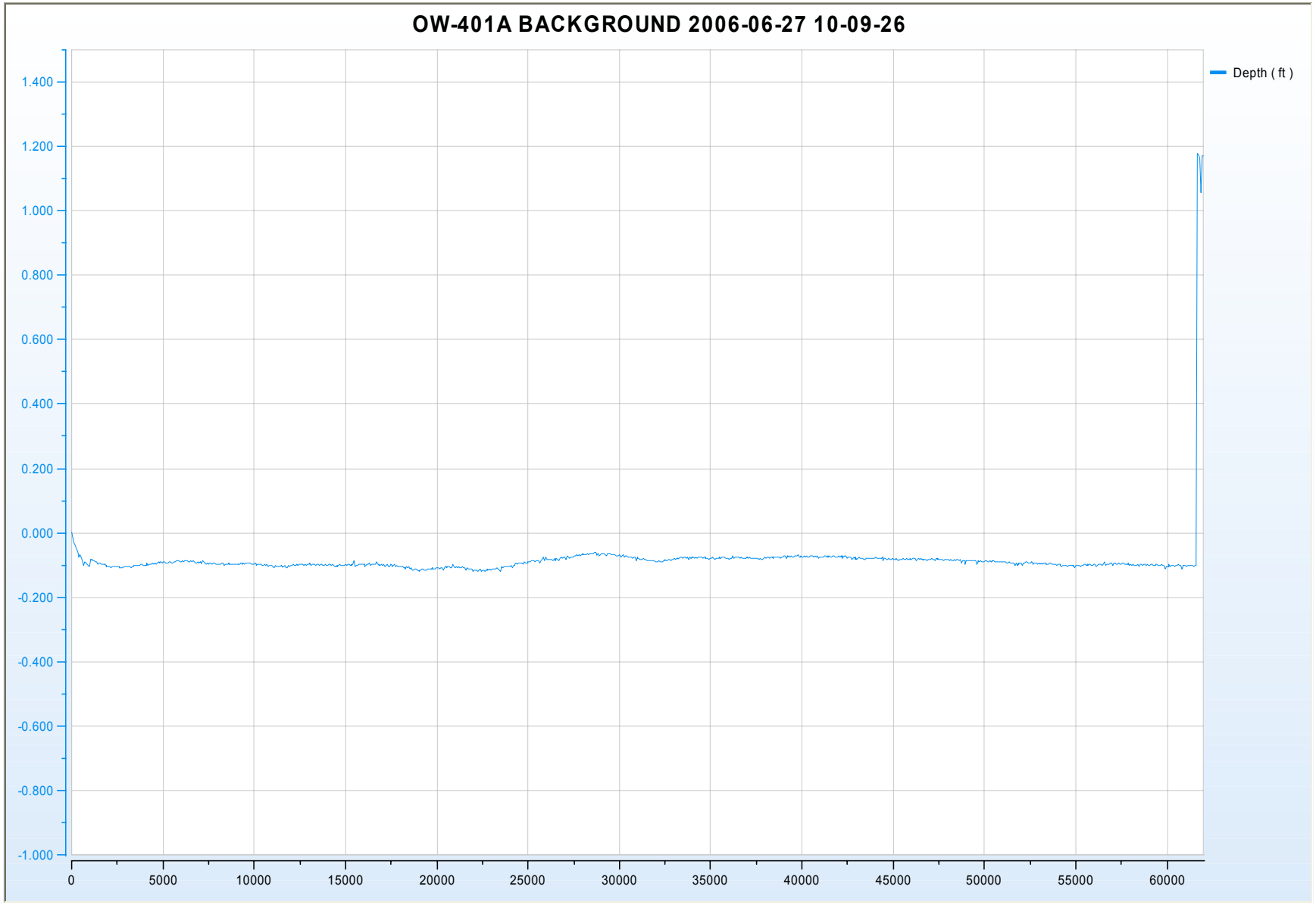

OW-313 RISING HEAD 2006-07-08 16-26-48
Level (DTW) ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
50
100
150
200
250
300
350
400
450
500
550
600
650

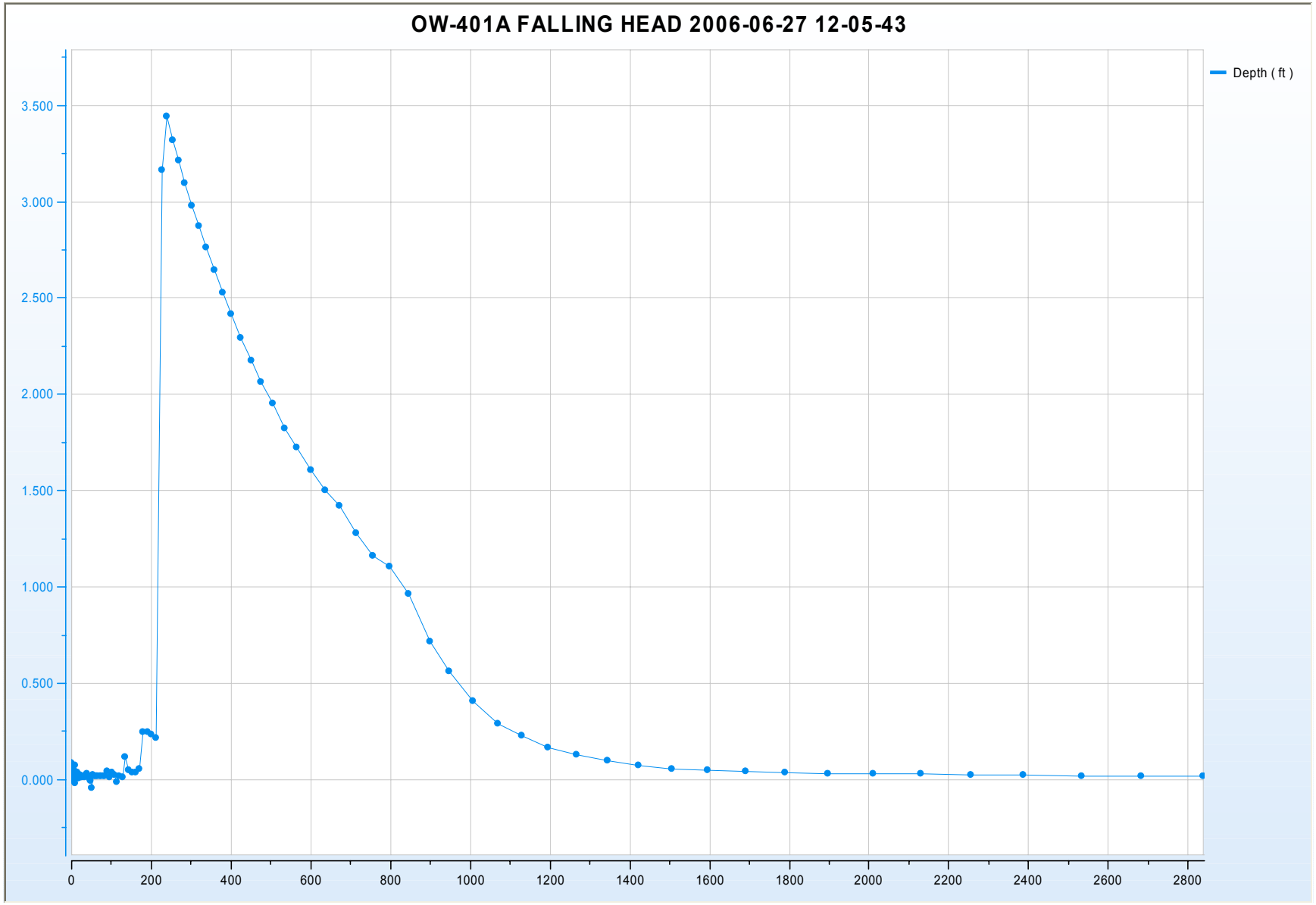

OW-333 BACKGROUND 2006-07-11 11-04-17
Level (DTW) ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000

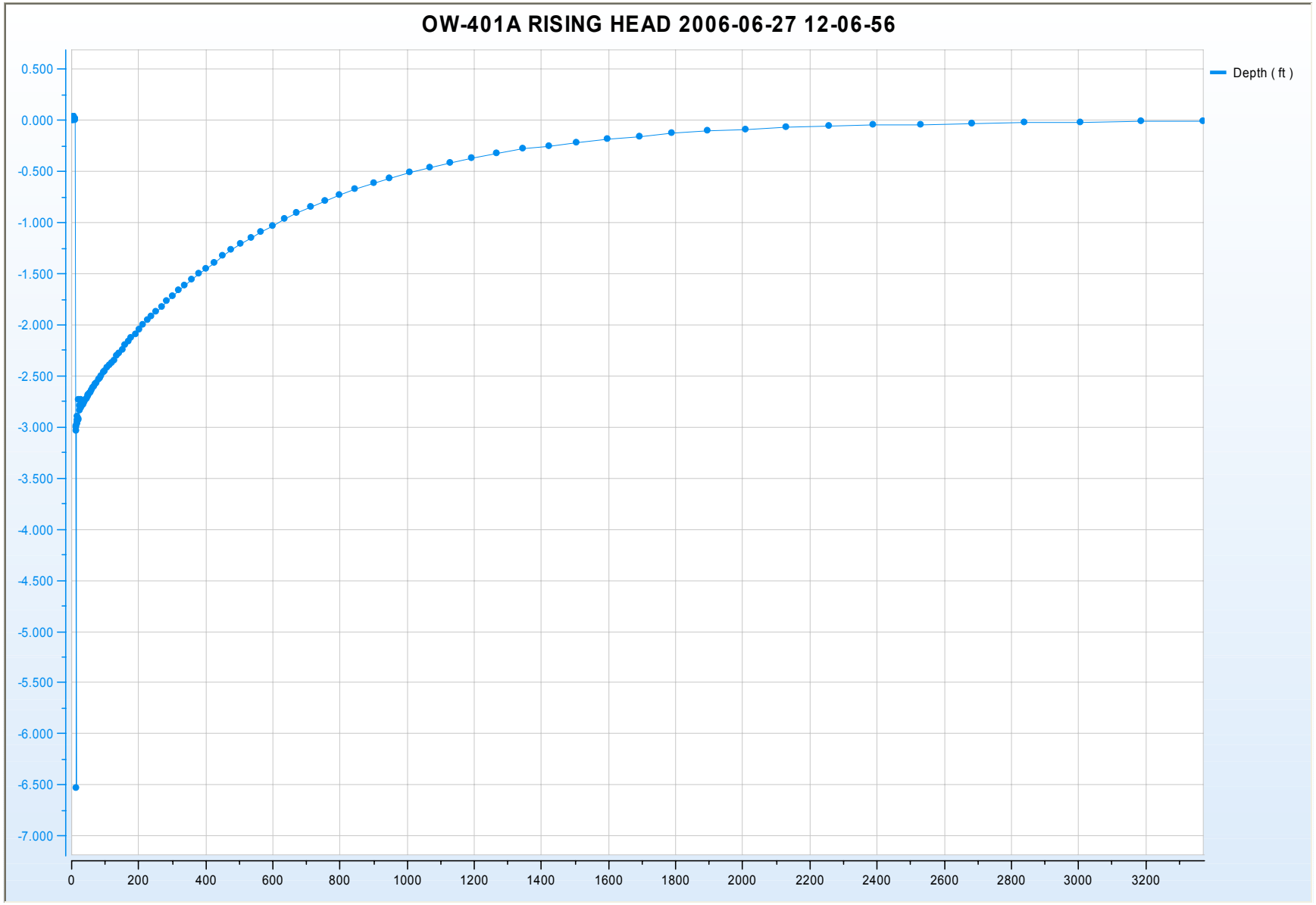

OW-333 RISING HEAD 2006-07-11 14-20-04
Level (DTW) ( ft )
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

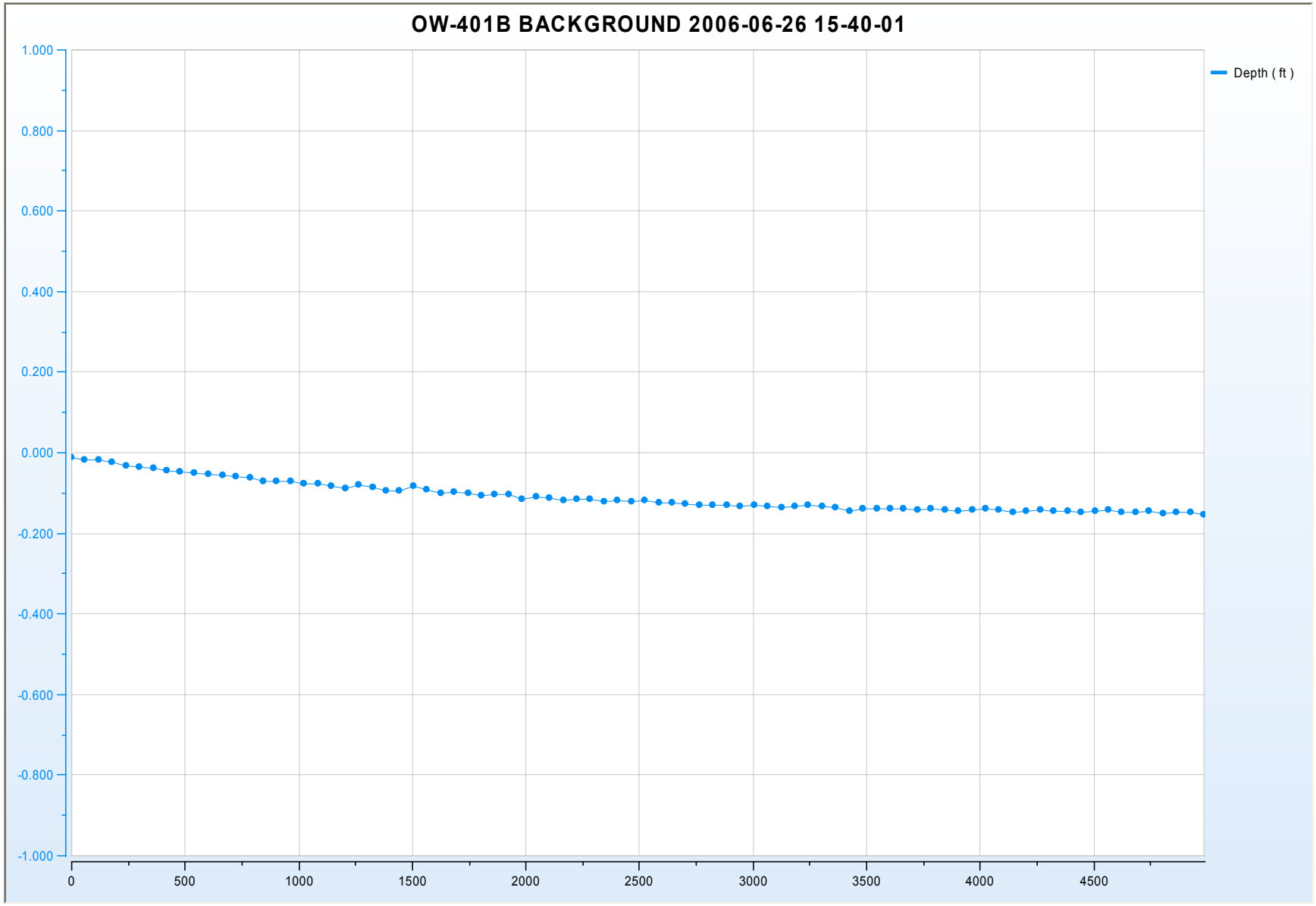

OW-327 BACKGROUND 2006-07-08 13-07-05
Level (DTW) ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

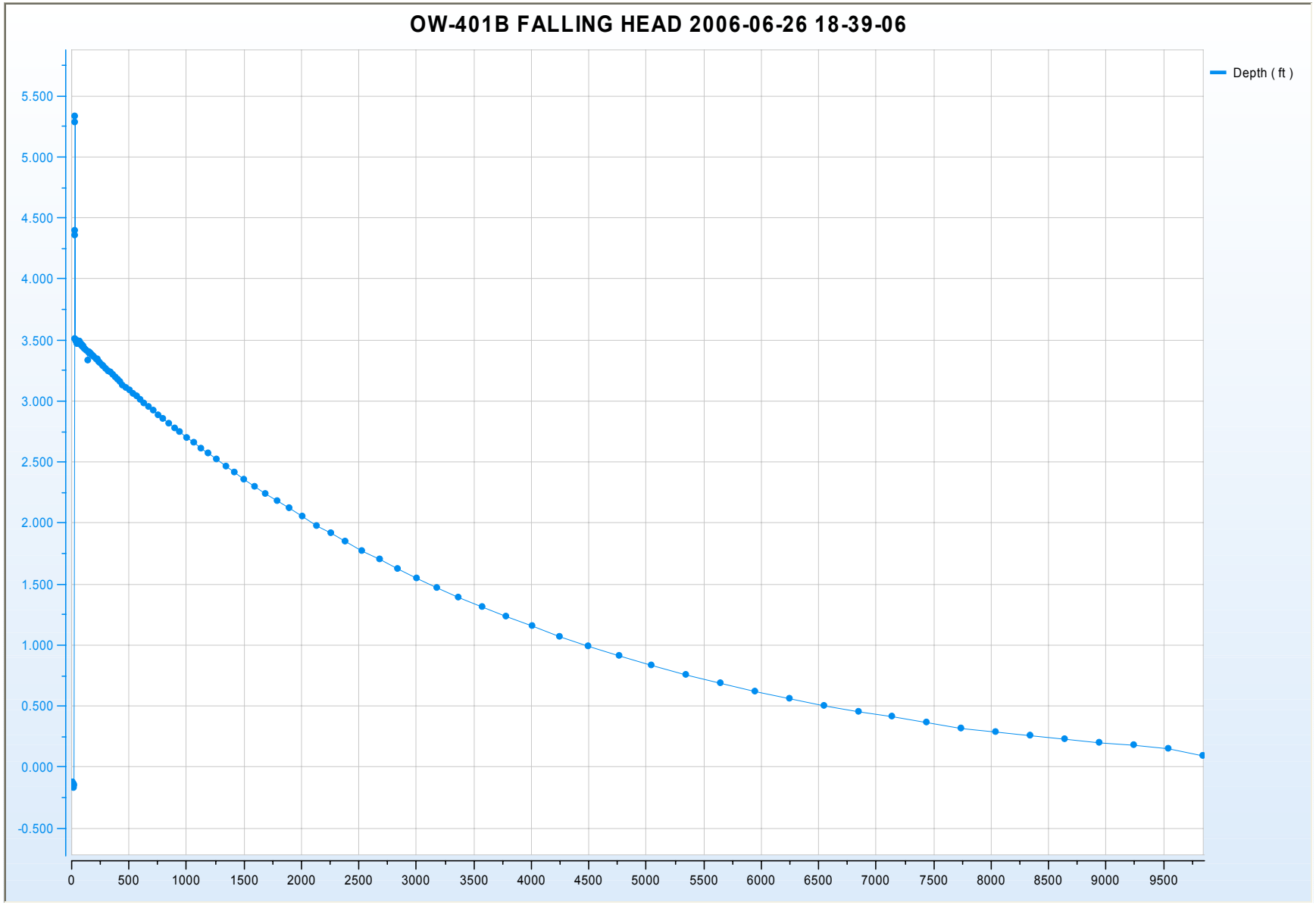

OW-327 RISING HEAD 2006-07-08 14-39-09
Level (DTW) ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

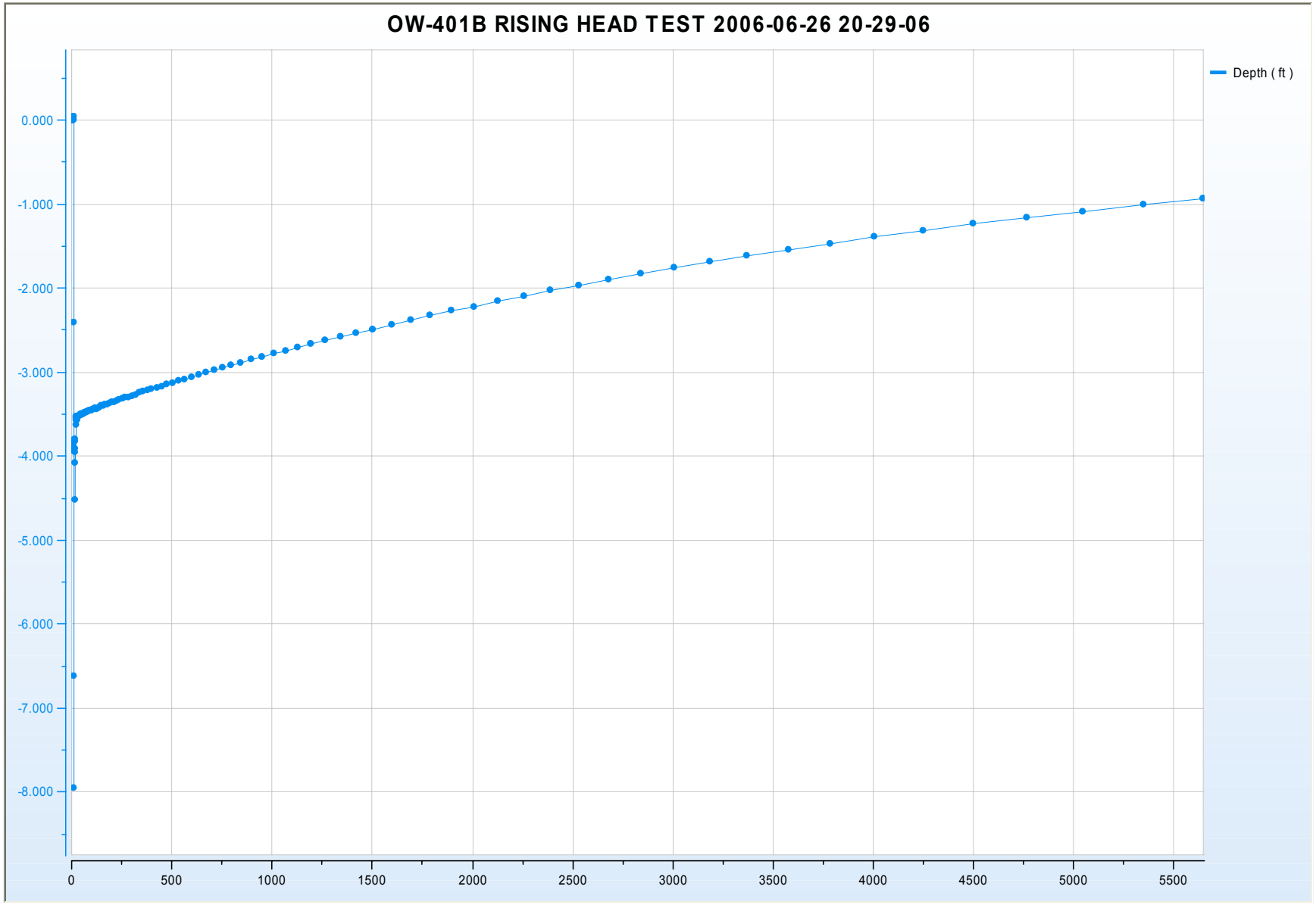

OW-401A BACKGROUND 2006-06-27 10-09-26
Depth ( ft )
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000

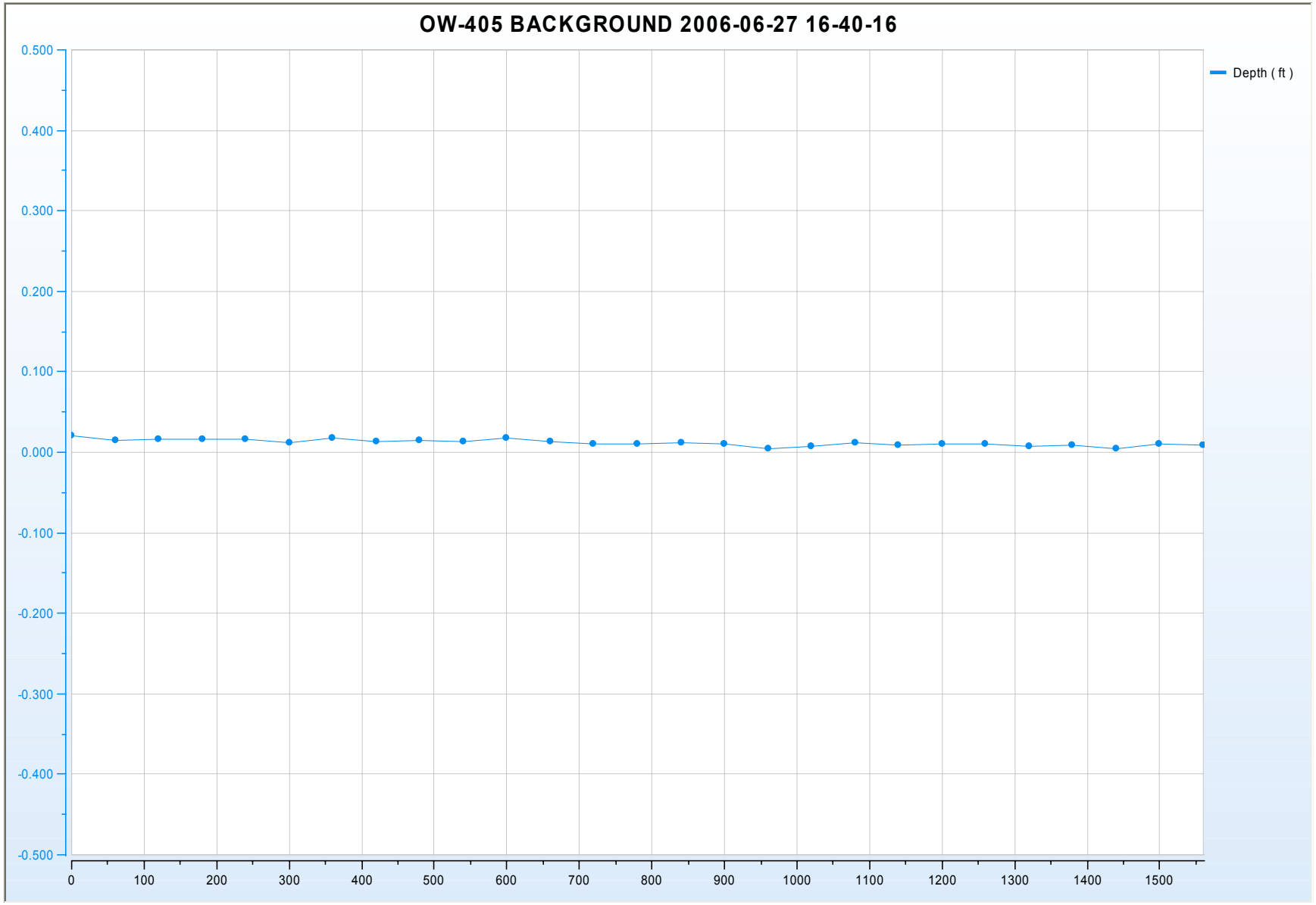

OW-401A FALLING HEAD 2006-06-27 12-05-43
Depth ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800

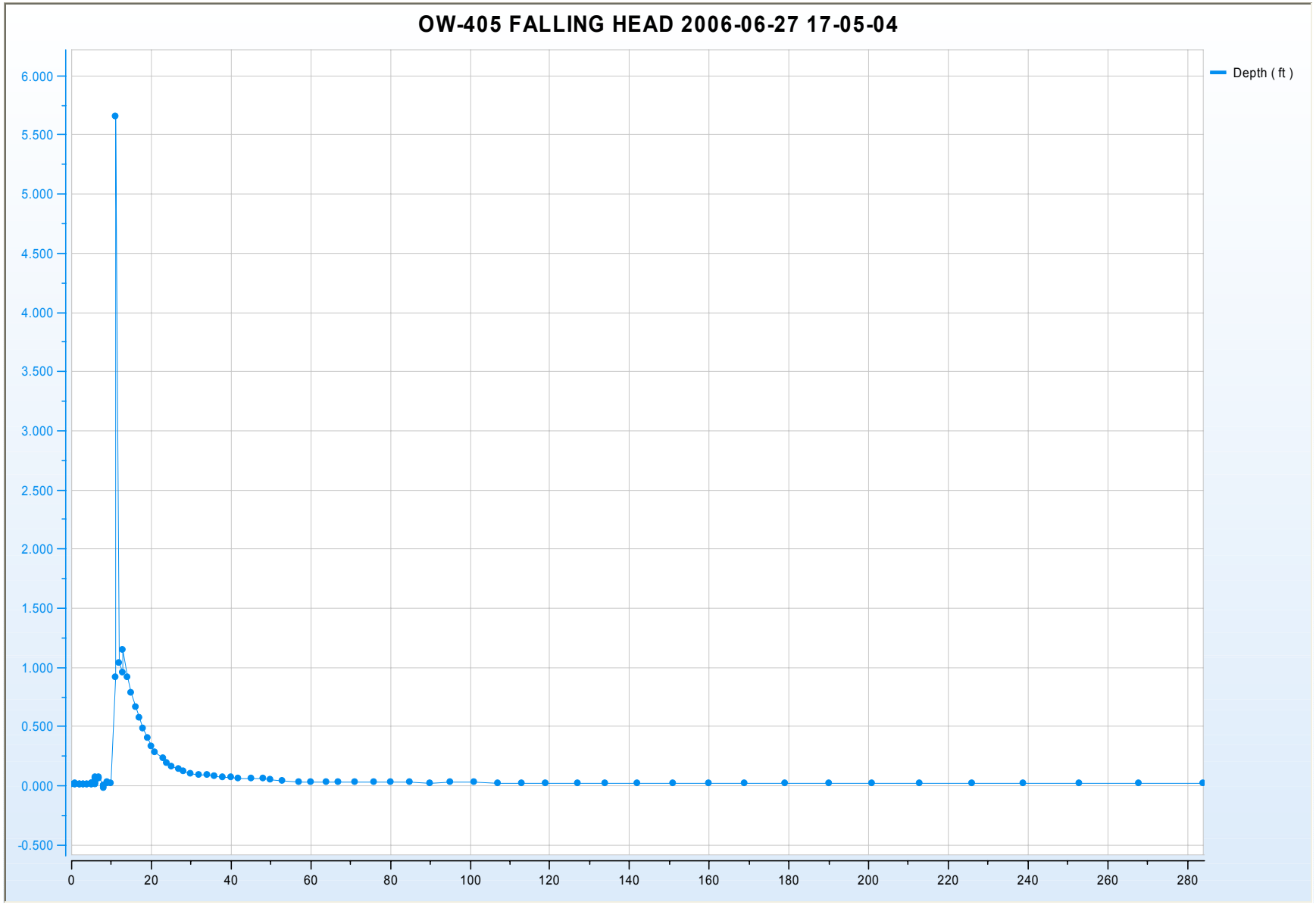

OW-401A RISING HEAD 2006-06-27 12-06-56
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
-6.000
-6.500
-7.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200

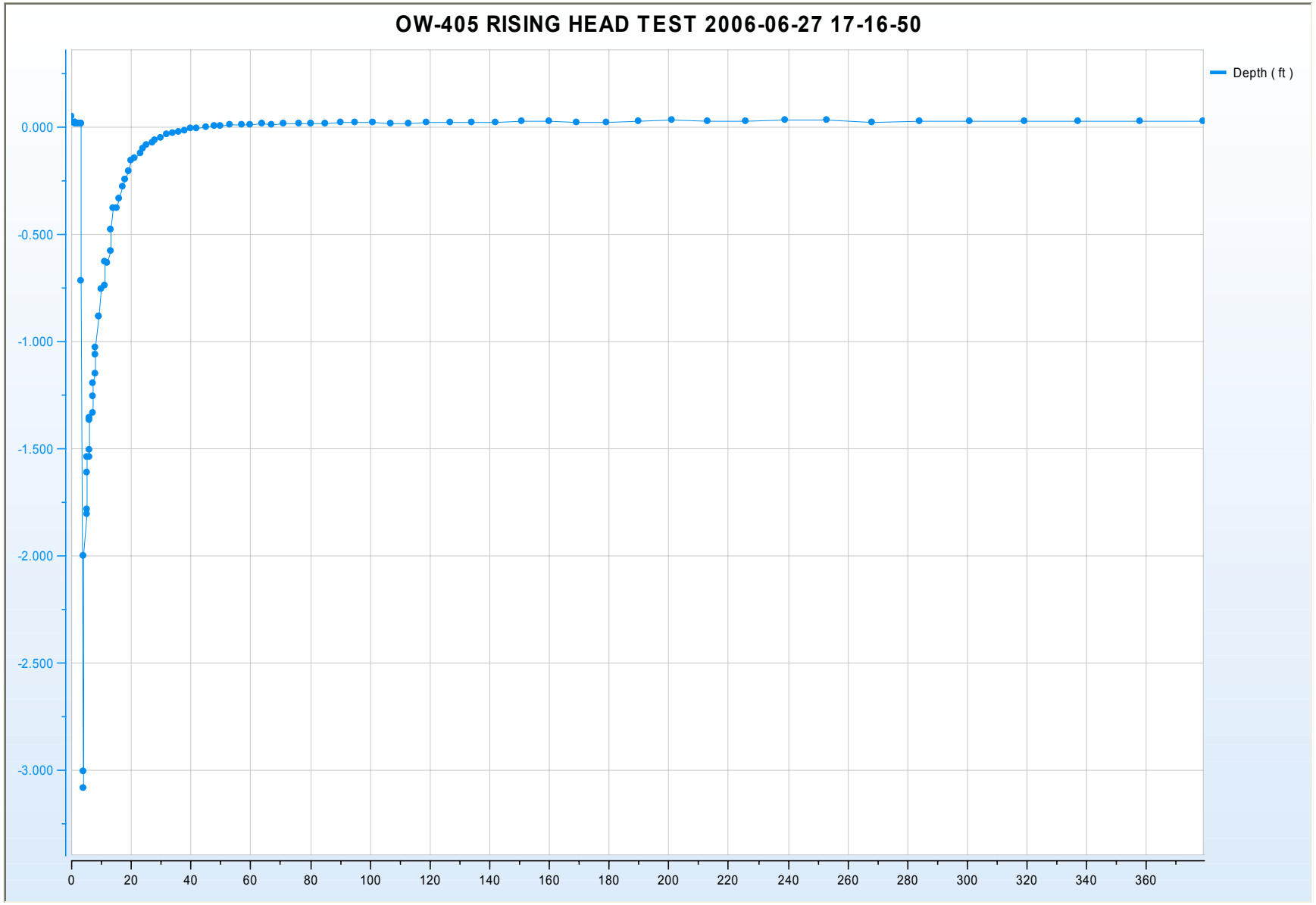

OW-401B BACKGROUND 2006-06-26 15-40-01
Depth ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500

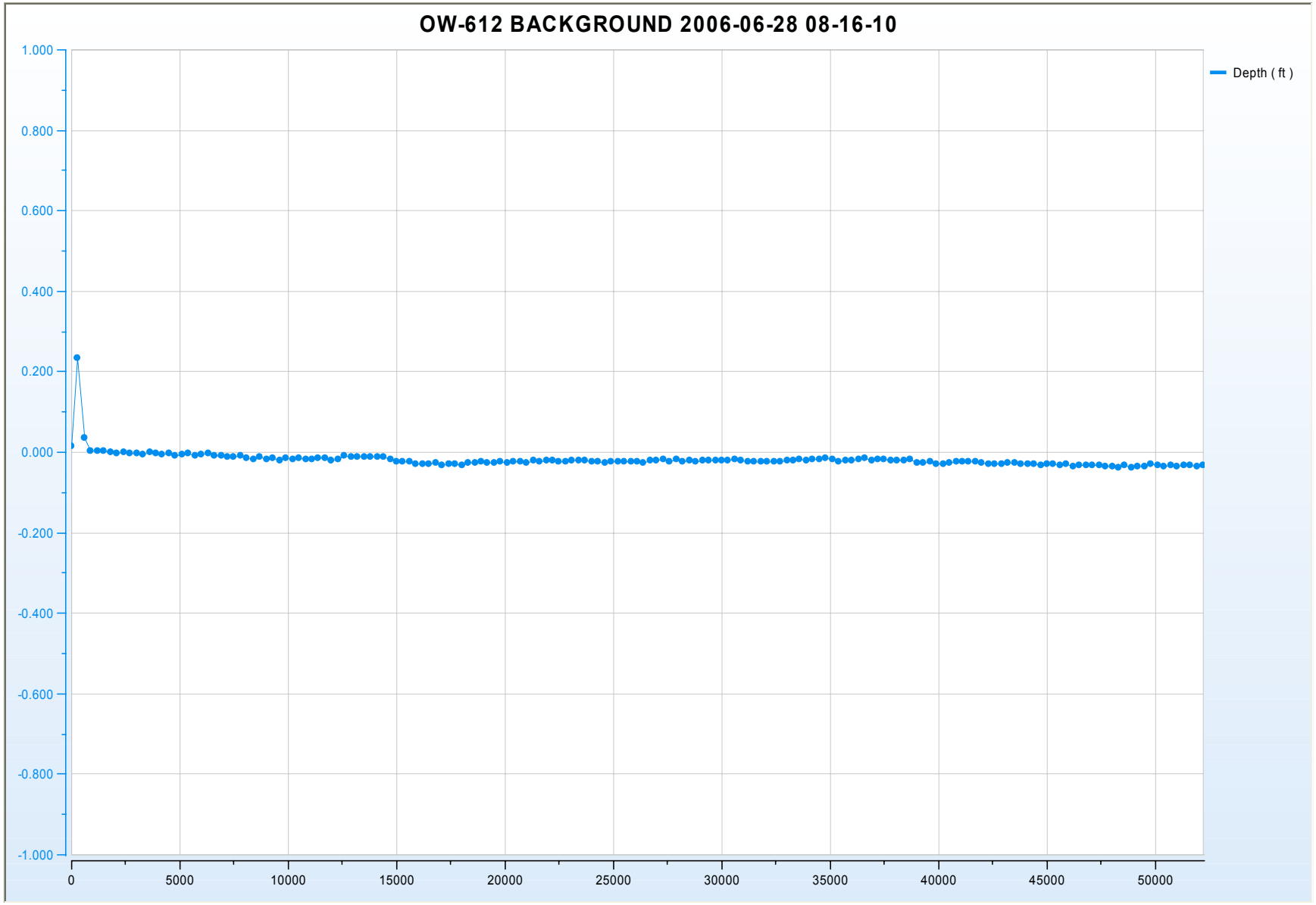

OW-401B FALLING HEAD 2006-06-26 18-39-06
Depth ( ft )
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500

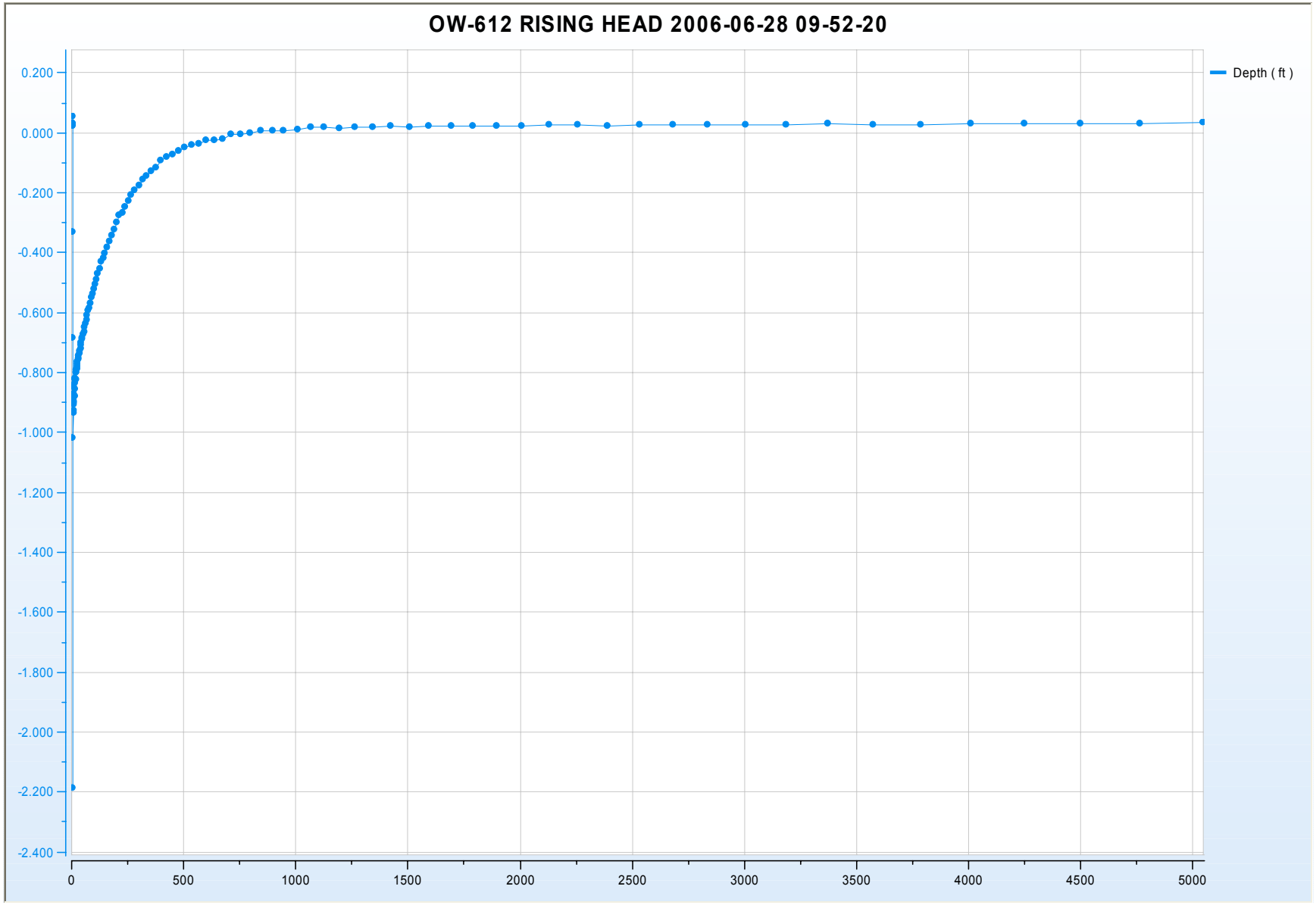

OW-401B RISING HEAD TEST 2006-06-26 20-29-06
Depth ( ft )
0.000
-1.000
-2.000
-3.000
-4.000
-5.000
-6.000
-7.000
-8.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500

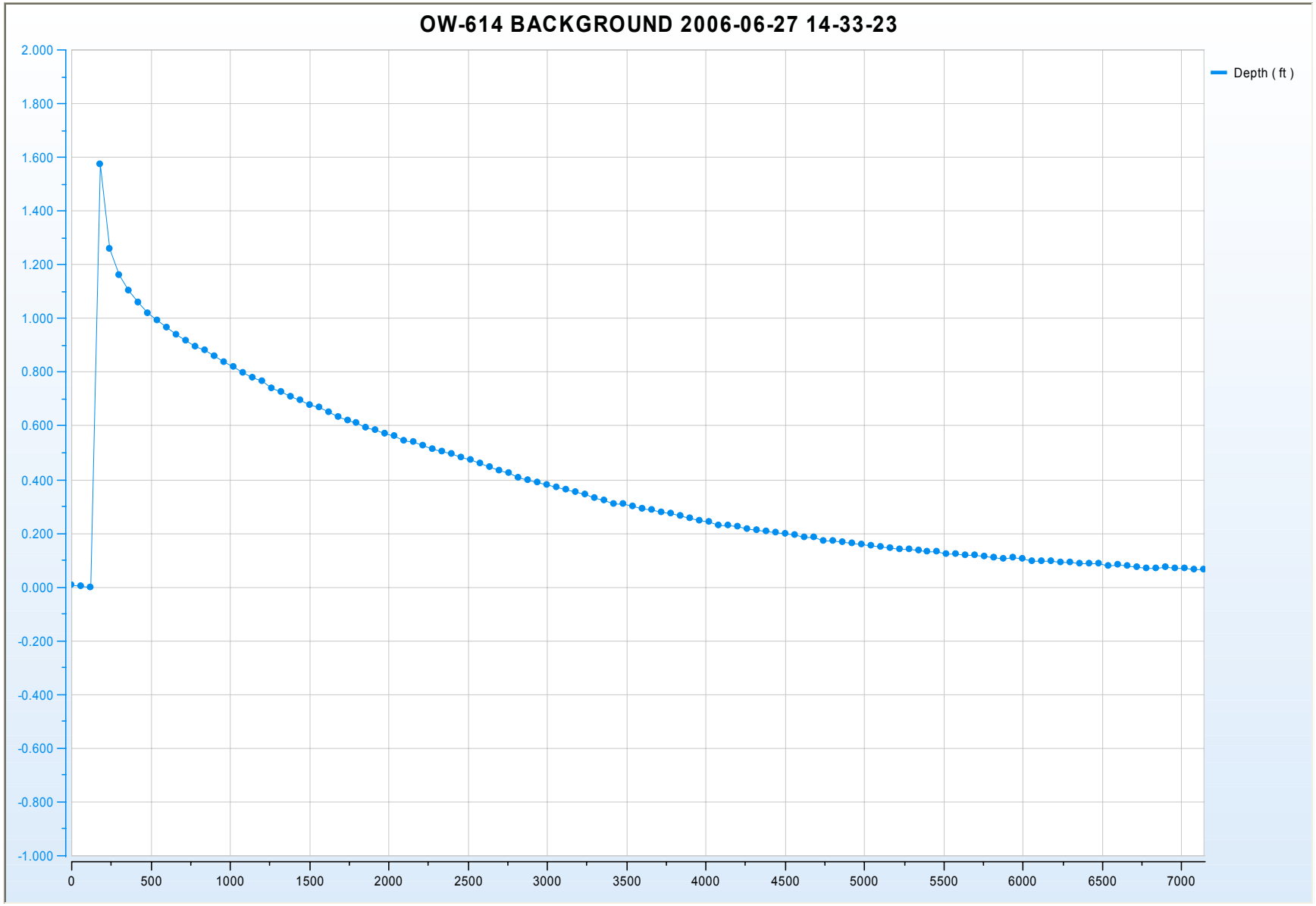

OW-405 BACKGROUND 2006-06-27 16-40-16
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500

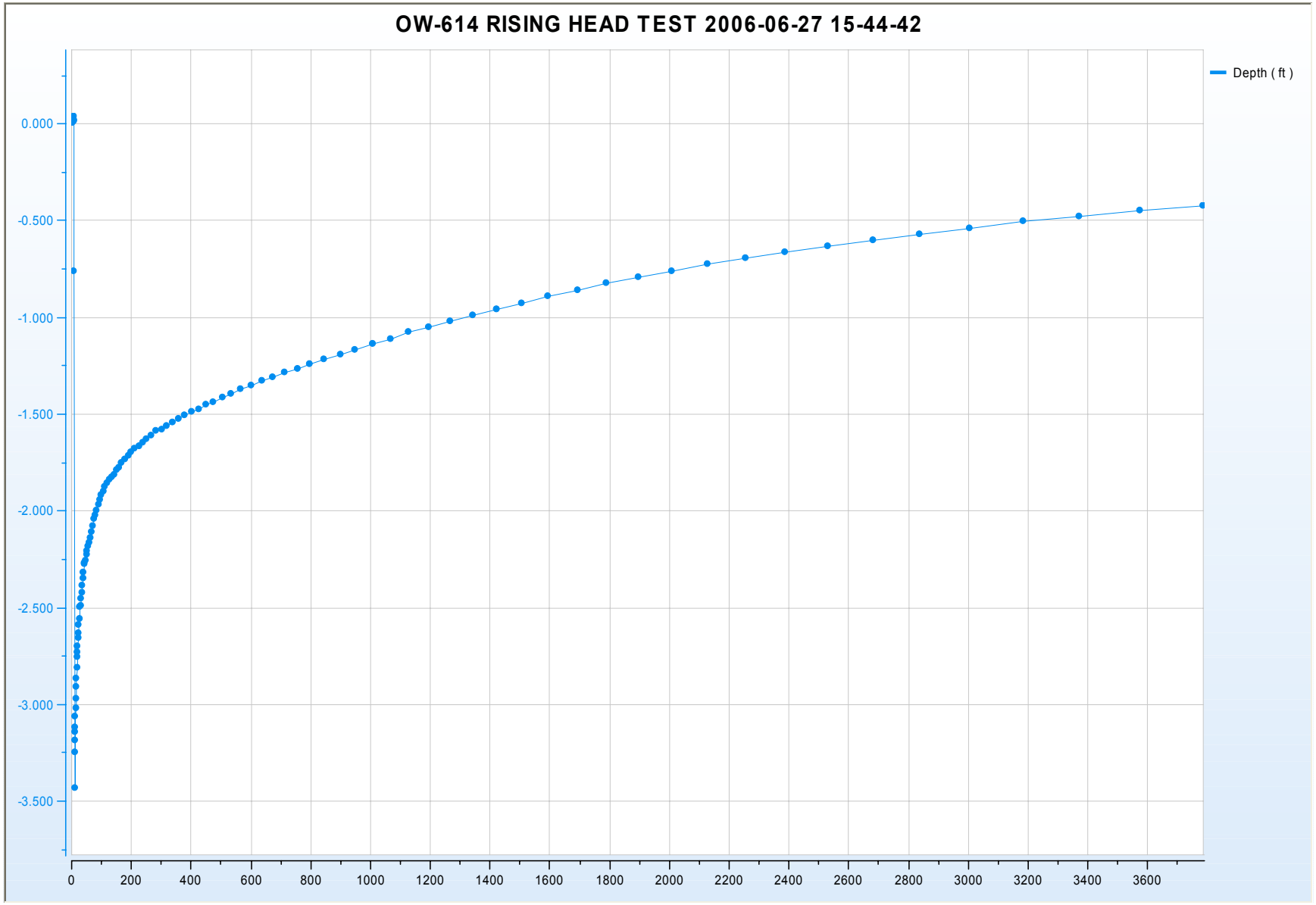

OW-405 FALLING HEAD 2006-06-27 17-05-04
Depth ( ft )
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280

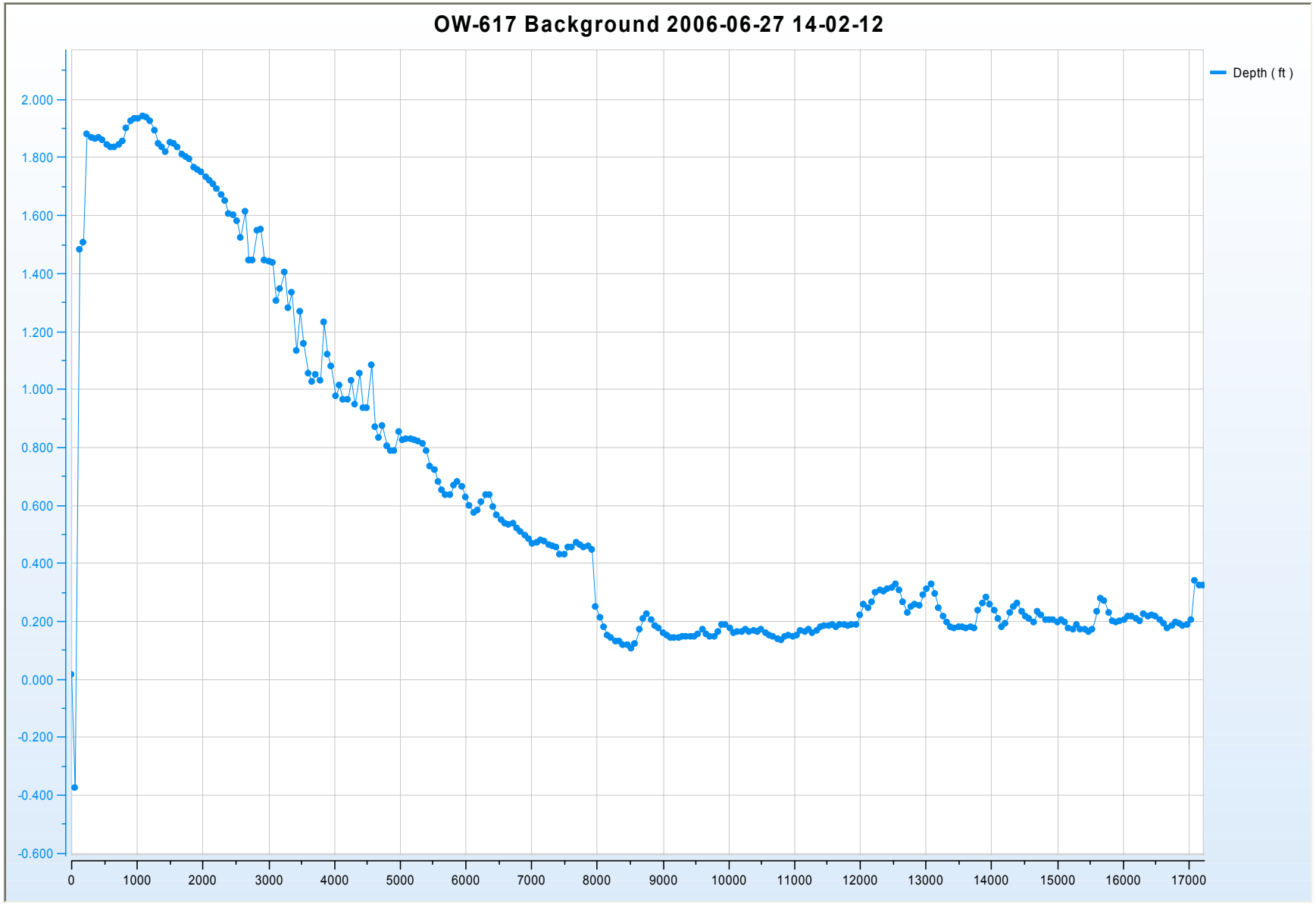

OW-405 RISING HEAD TEST 2006-06-27 17-16-50
Depth ( ft )
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360

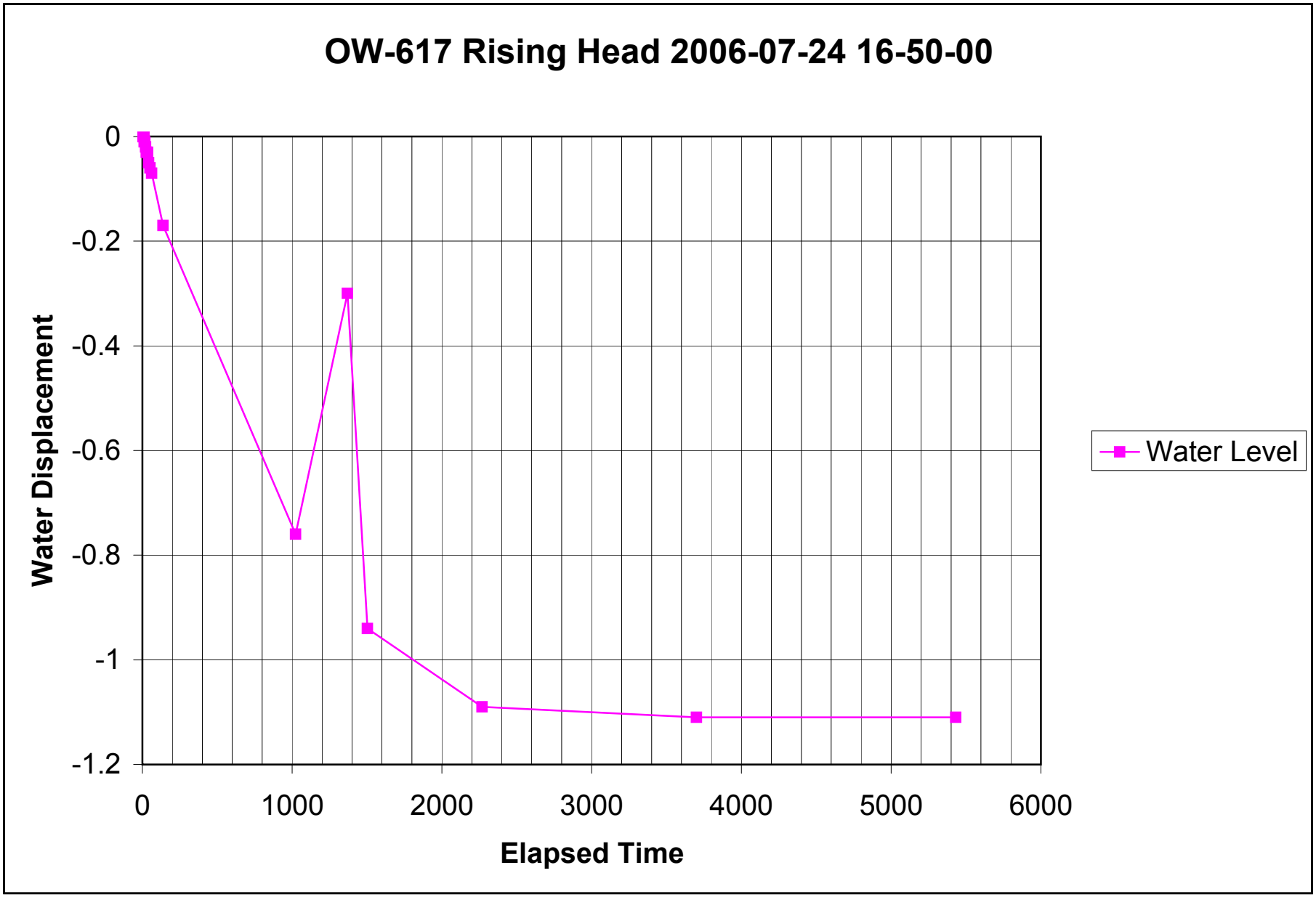

OW-612 BACKGROUND 2006-06-28 08-16-10
Depth ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000

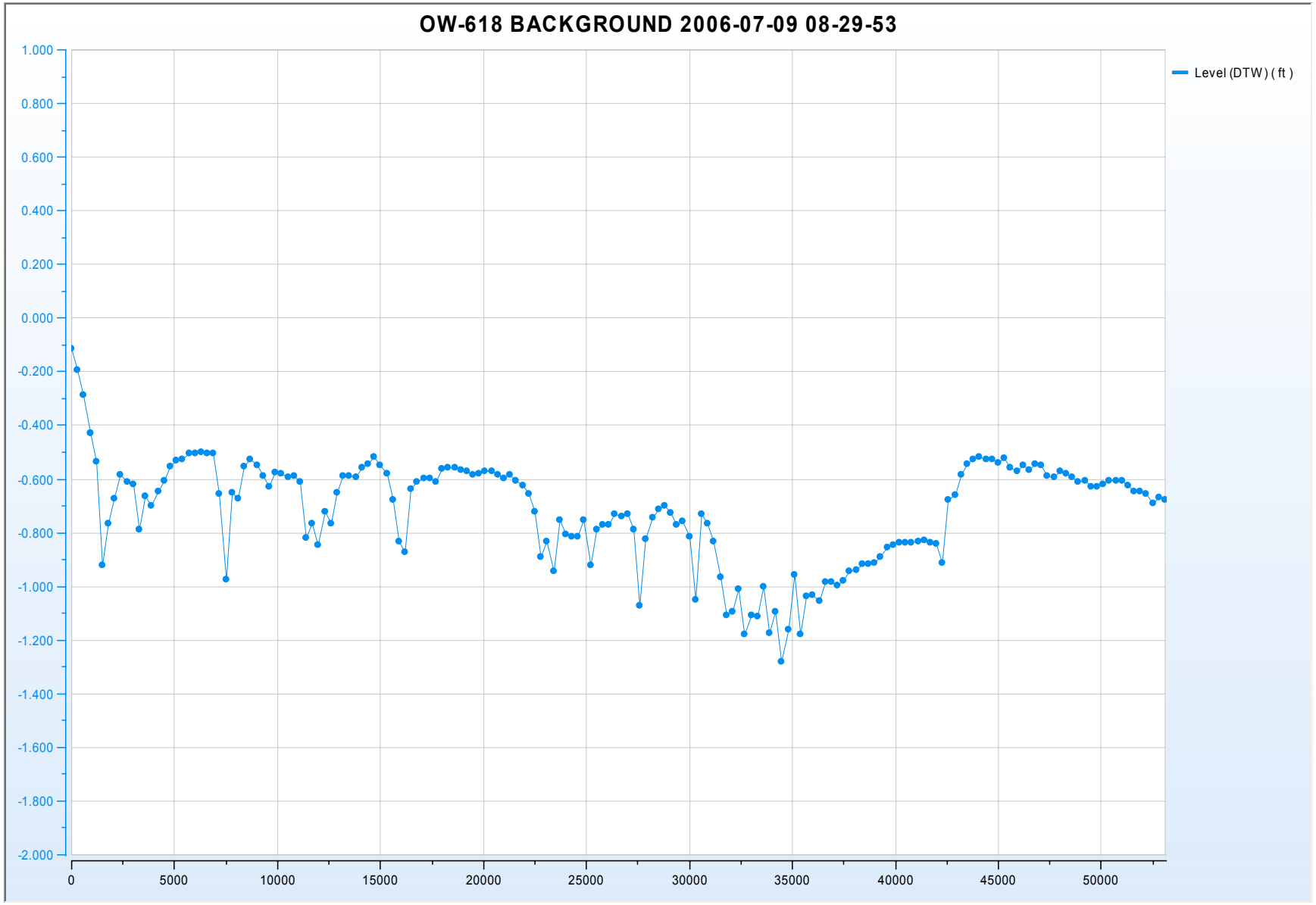

OW-612 RISING HEAD 2006-06-28 09-52-20
Depth ( ft )
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
-1.200
-1.400
-1.600
-1.800
-2.000
-2.200
-2.400
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000

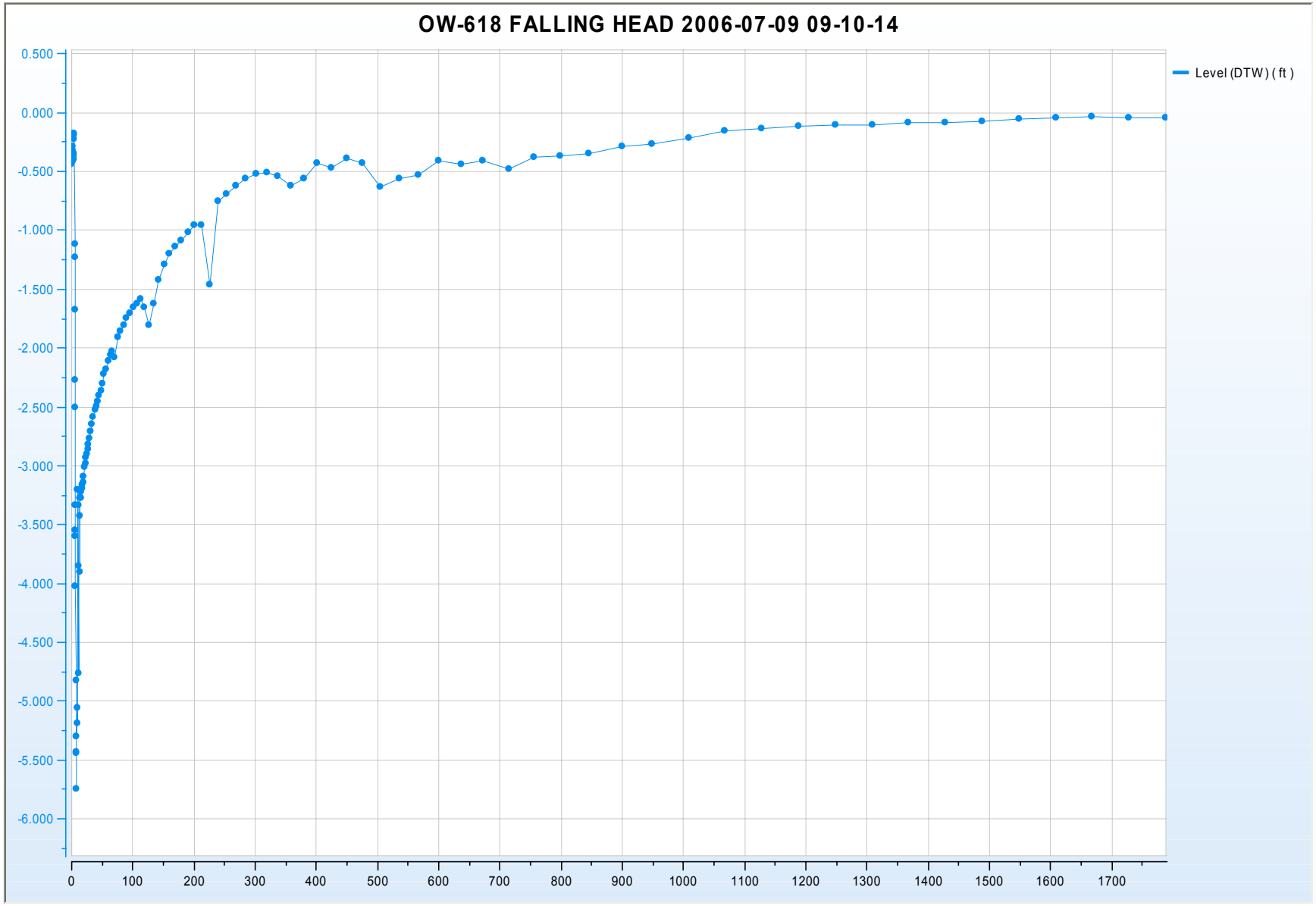

OW-614 BACKGROUND 2006-06-27 14-33-23
Depth ( ft )
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000

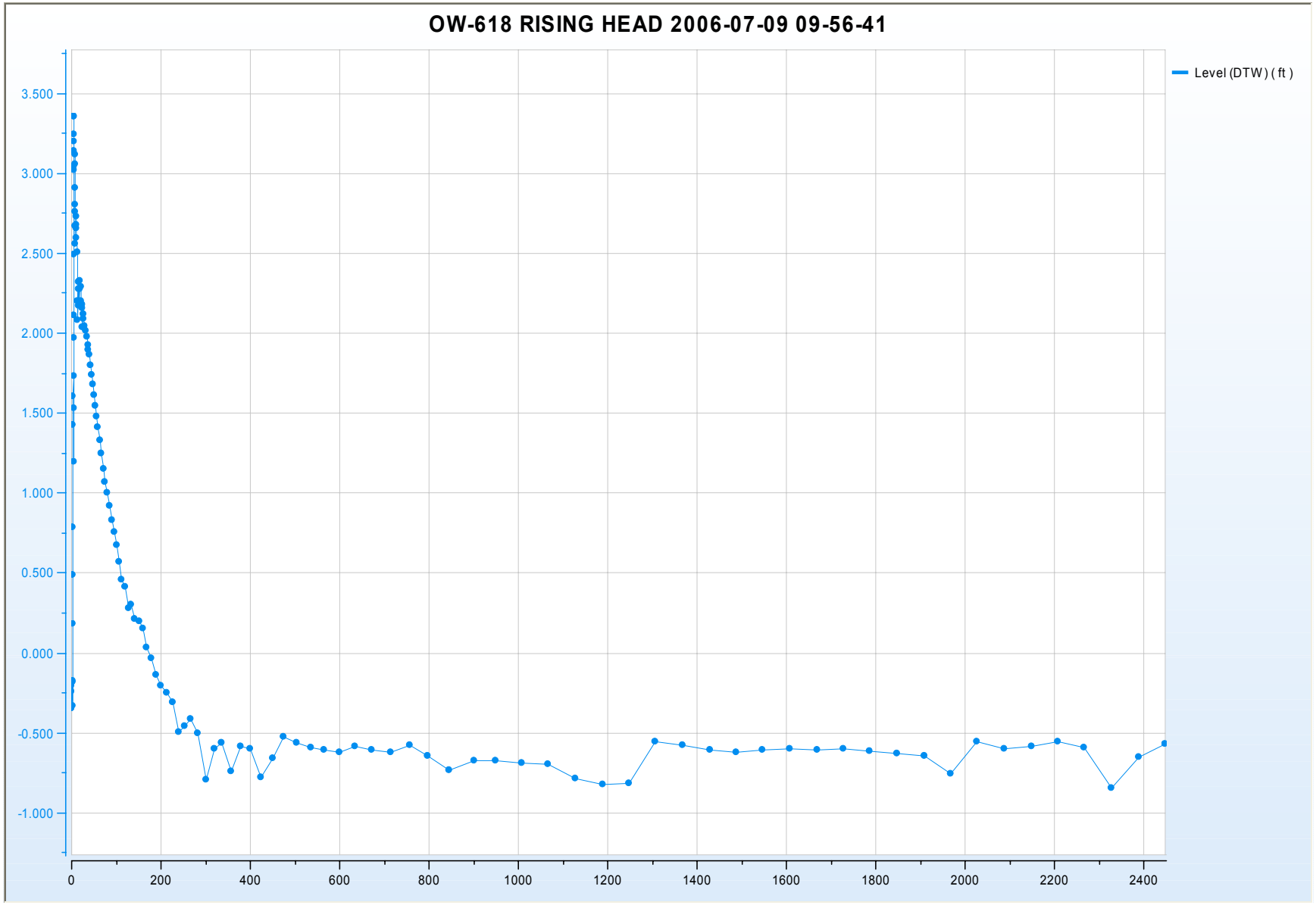

OW-614 RISING HEAD TEST 2006-06-27 15-44-42
Depth ( ft )
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600

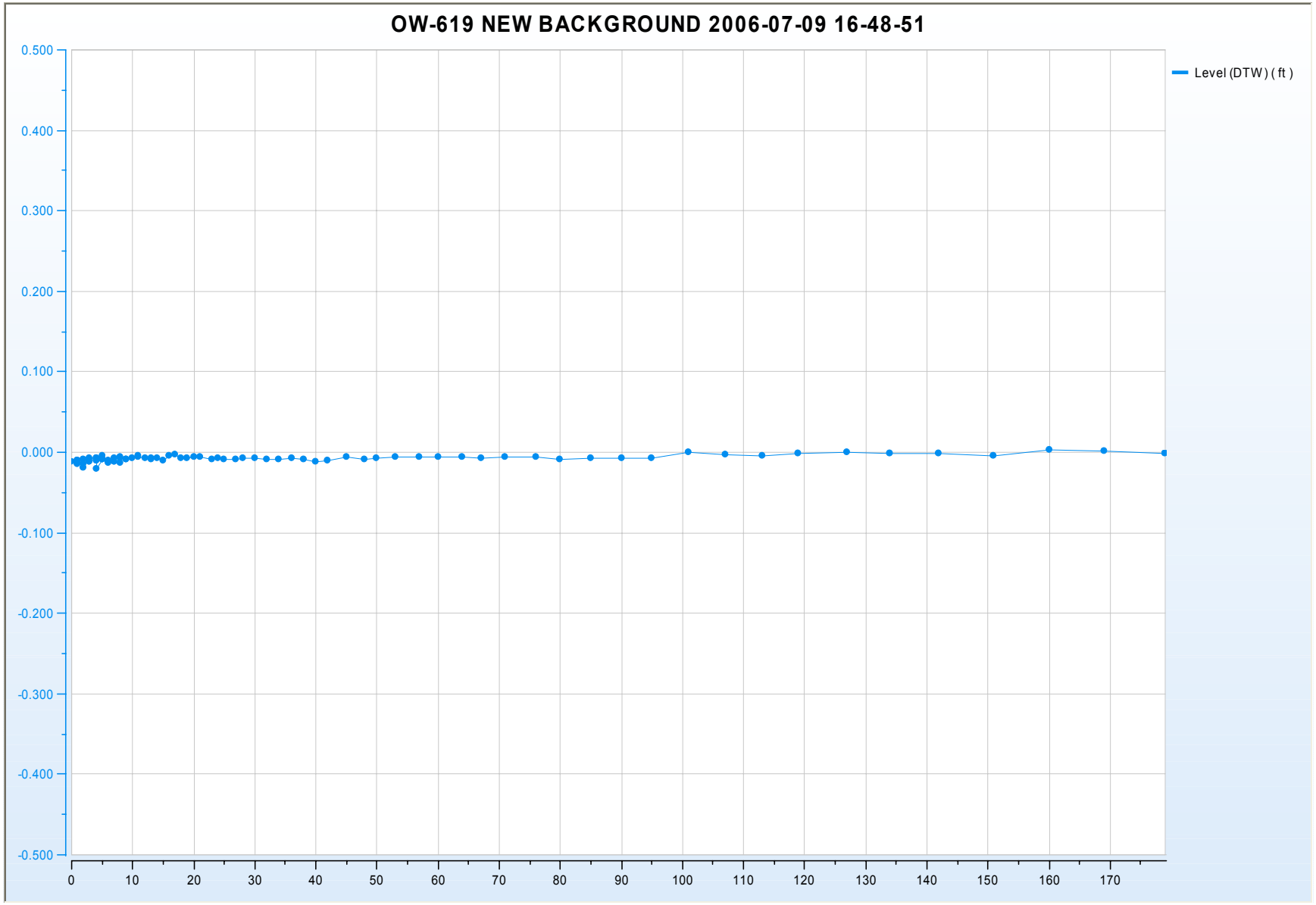

OW-617 Background 2006-06-27 14-02-12
Depth ( ft )
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000

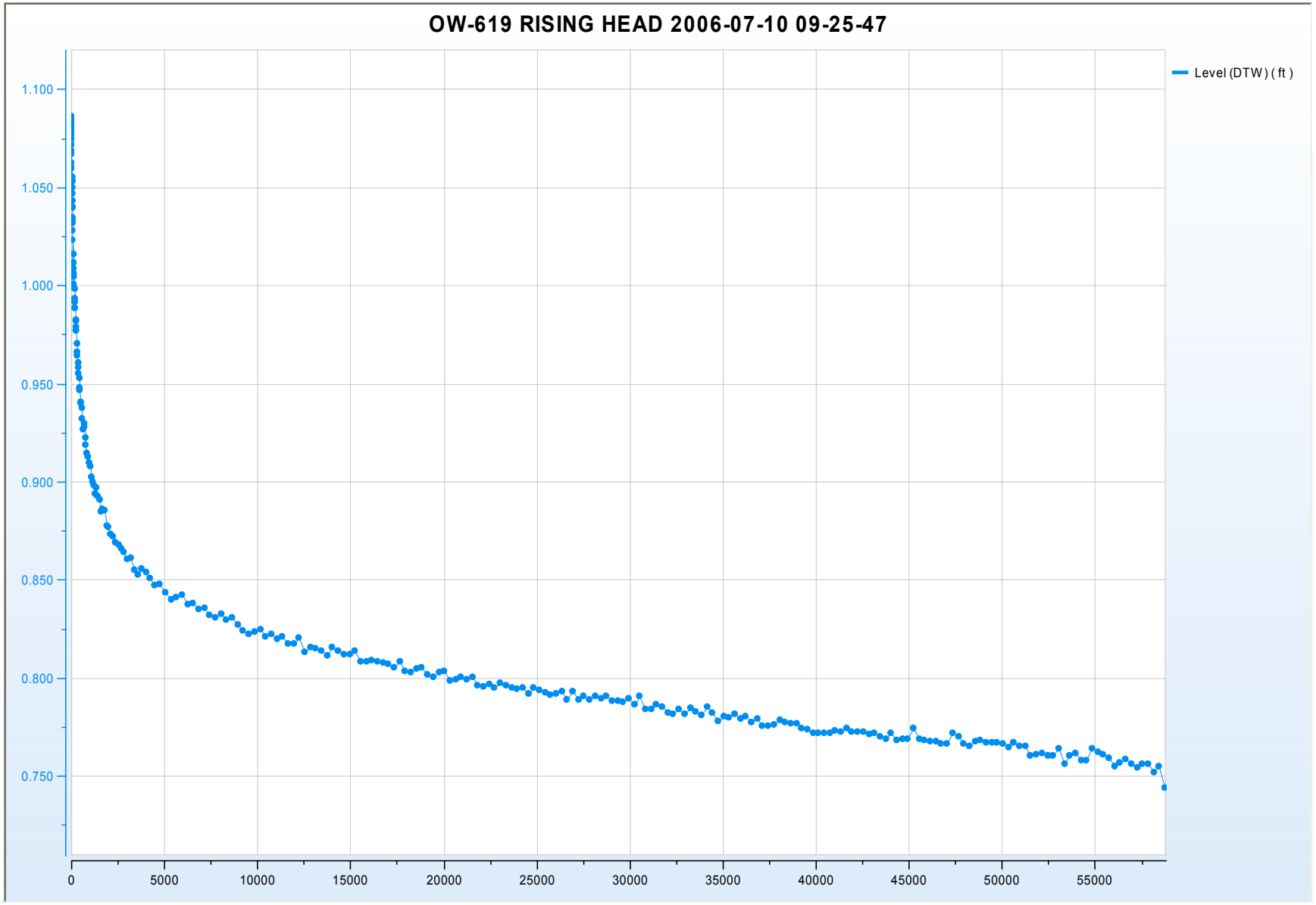

OW-617 Rising Head 2006-07-24 16-50-00
Water Displacement
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
1000
2000
3000
4000
5000
6000
Elapsed Time
Water Level

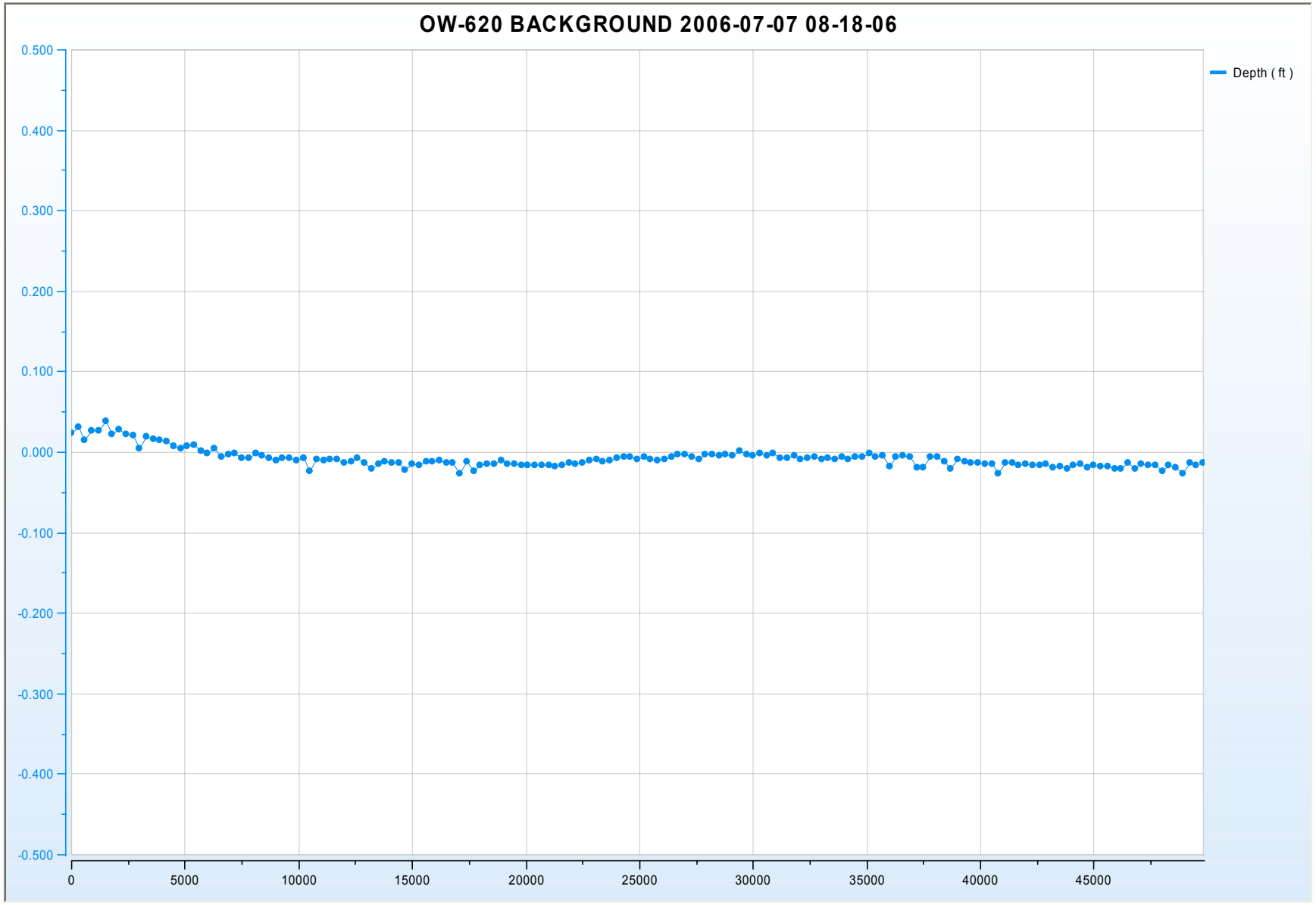

OW-618 BACKGROUND 2006-07-09 08-29-53
Level (DTW) ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
-1.200
-1.400
-1.600
-1.800
-2.000
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000

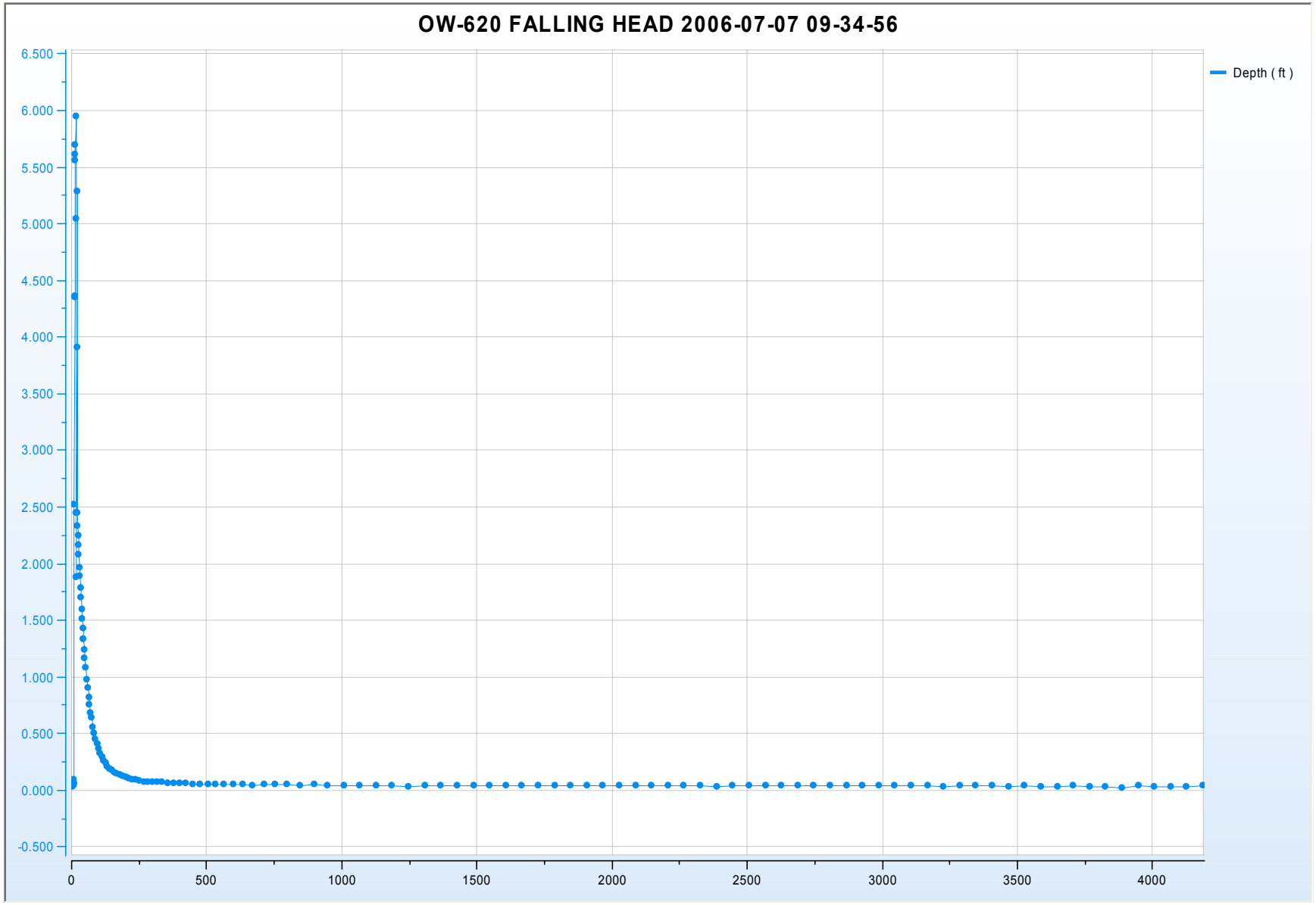

OW-618 FALLING HEAD 2006-07-09 09-10-14
Level (DTW) ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
-6.000
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700

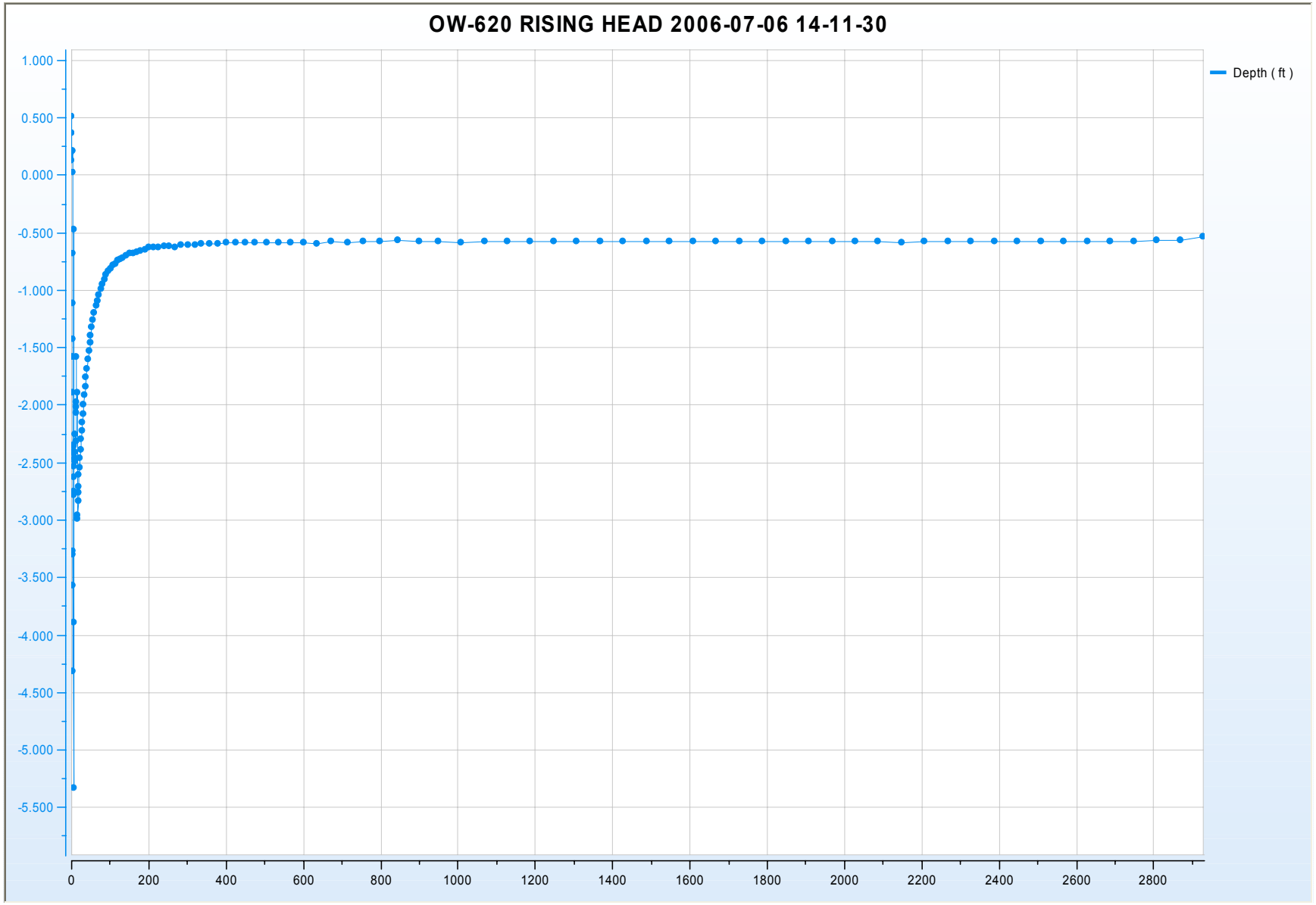

OW-618 RISING HEAD 2006-07-09 09-56-41
Level (DTW) ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400

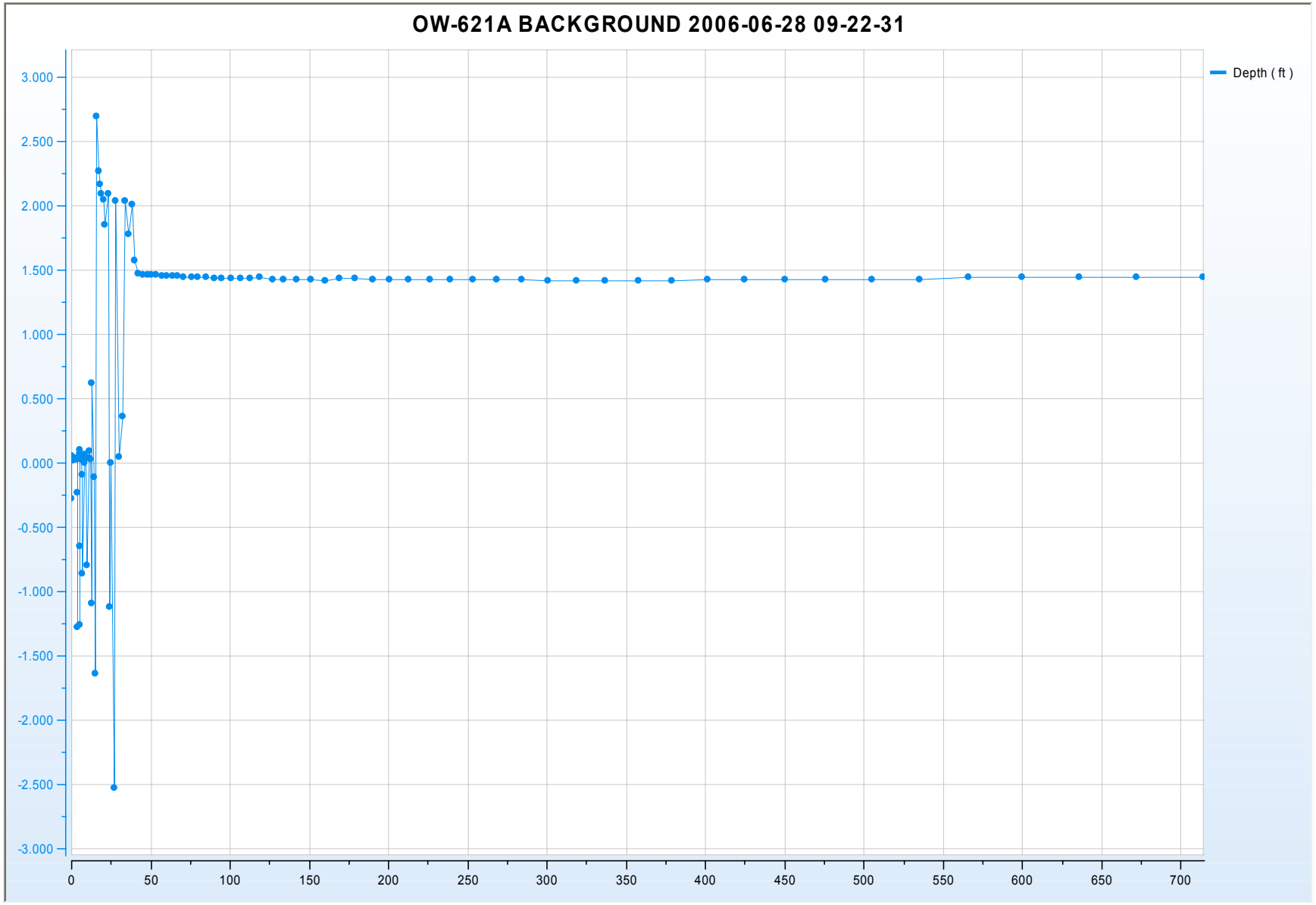

OW-619 NEW BACKGROUND 2006-07-09 16-48-51
Level (DTW) ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170

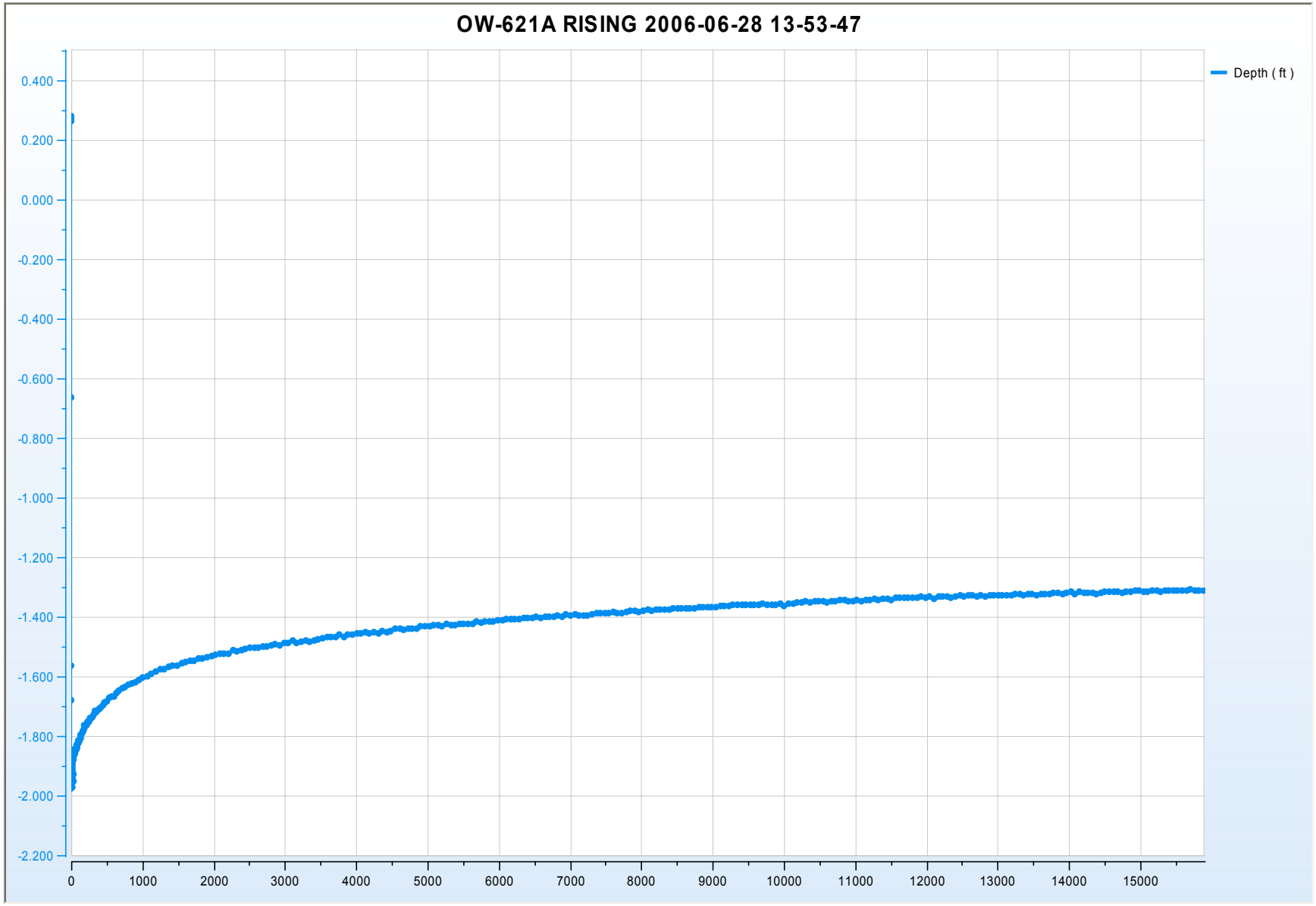

OW-619 RISING HEAD 2006-07-10 09-25-47
Level (DTW) ( ft )
1.100
1.050
1.000
0.950
0.900
0.850
0.800
0.750
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000

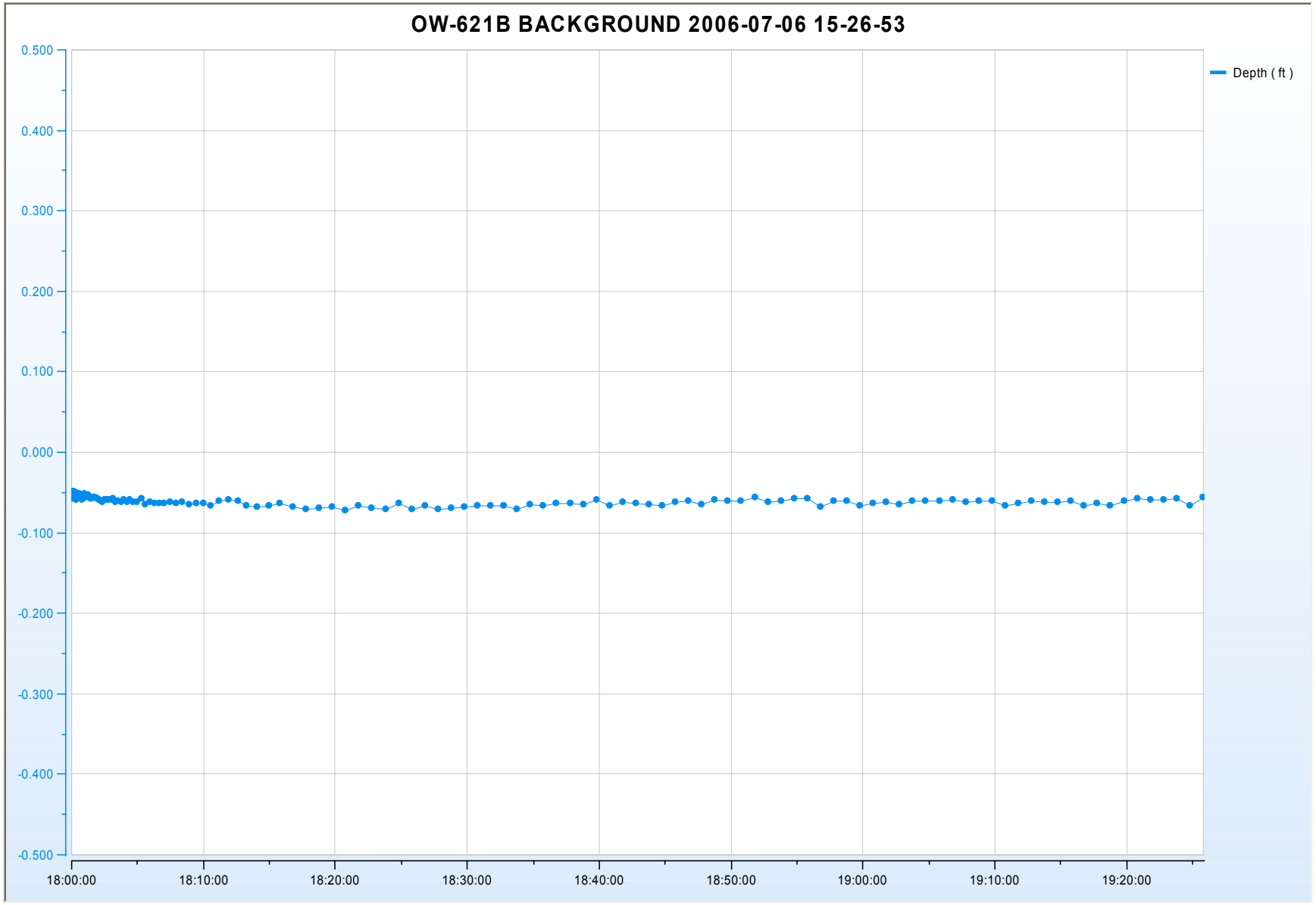

OW-620 BACKGROUND 2006-07-07 08-18-06
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
5000
10000
15000
20000
25000
30000
35000
40000
45000

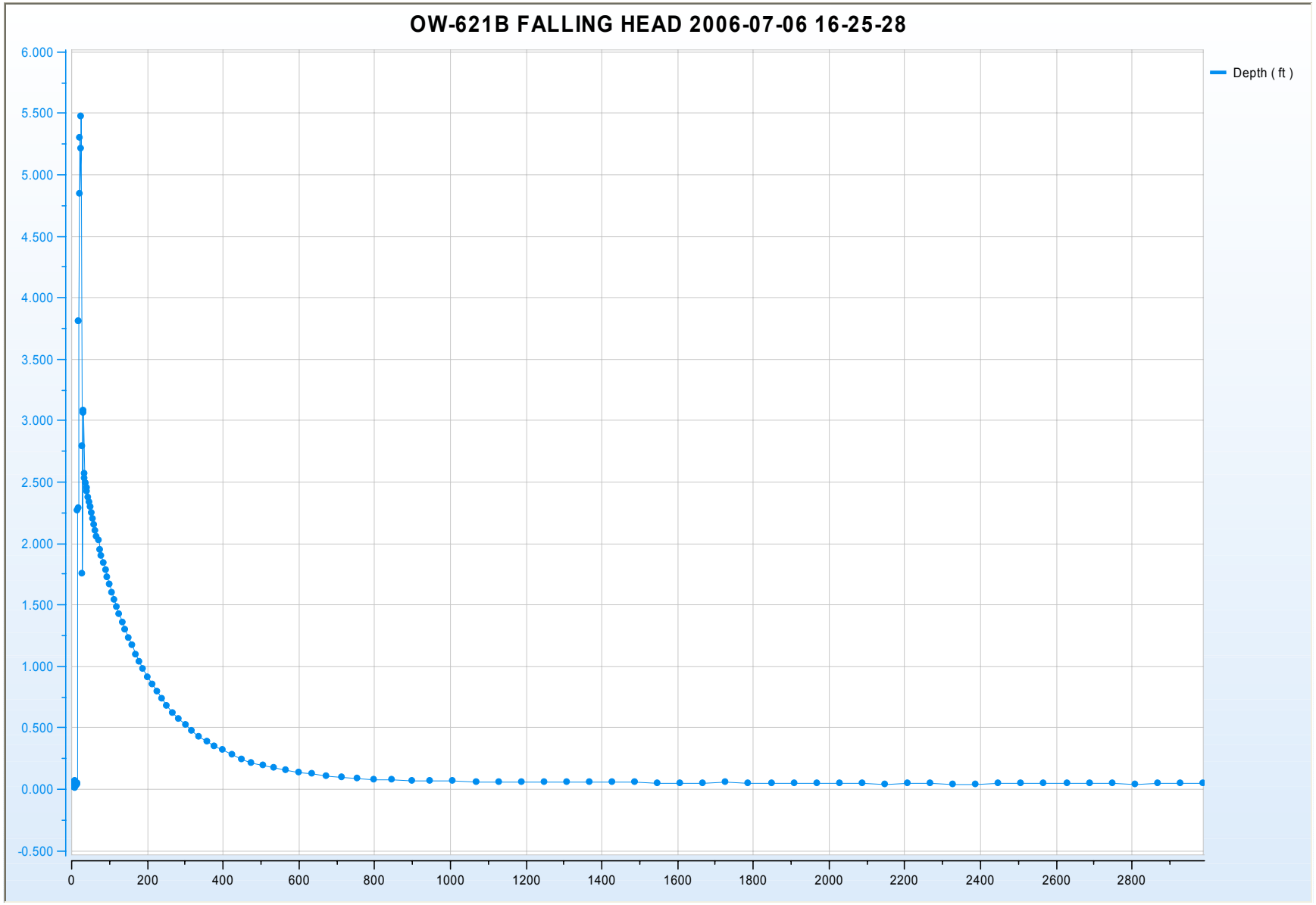

OW-620 FALLING HEAD 2006-07-07 09-34-56
Depth ( ft )
6.500
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000

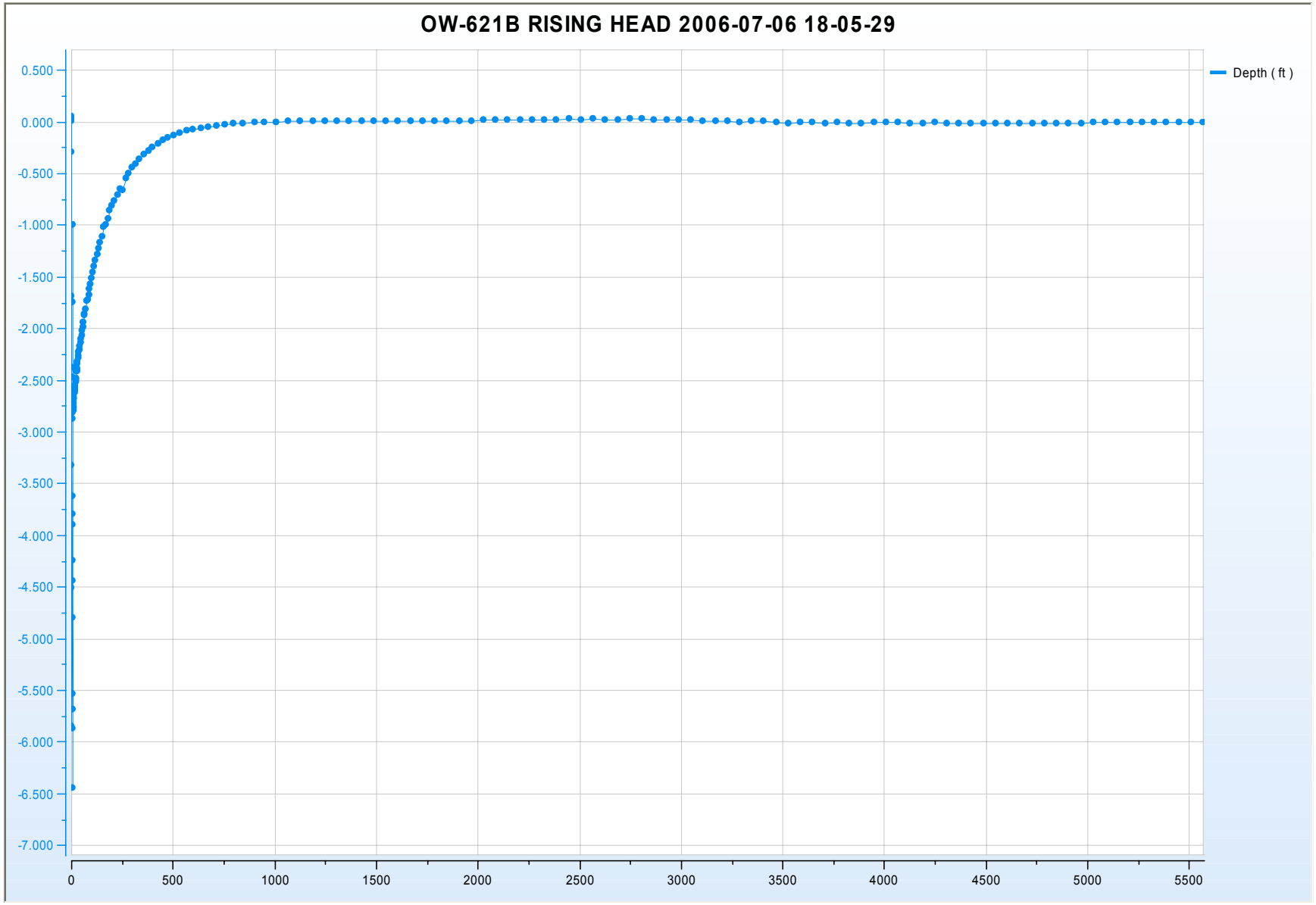

OW-620 RISING HEAD 2006-07-06 14-11-30
Depth ( ft )
1.000
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800

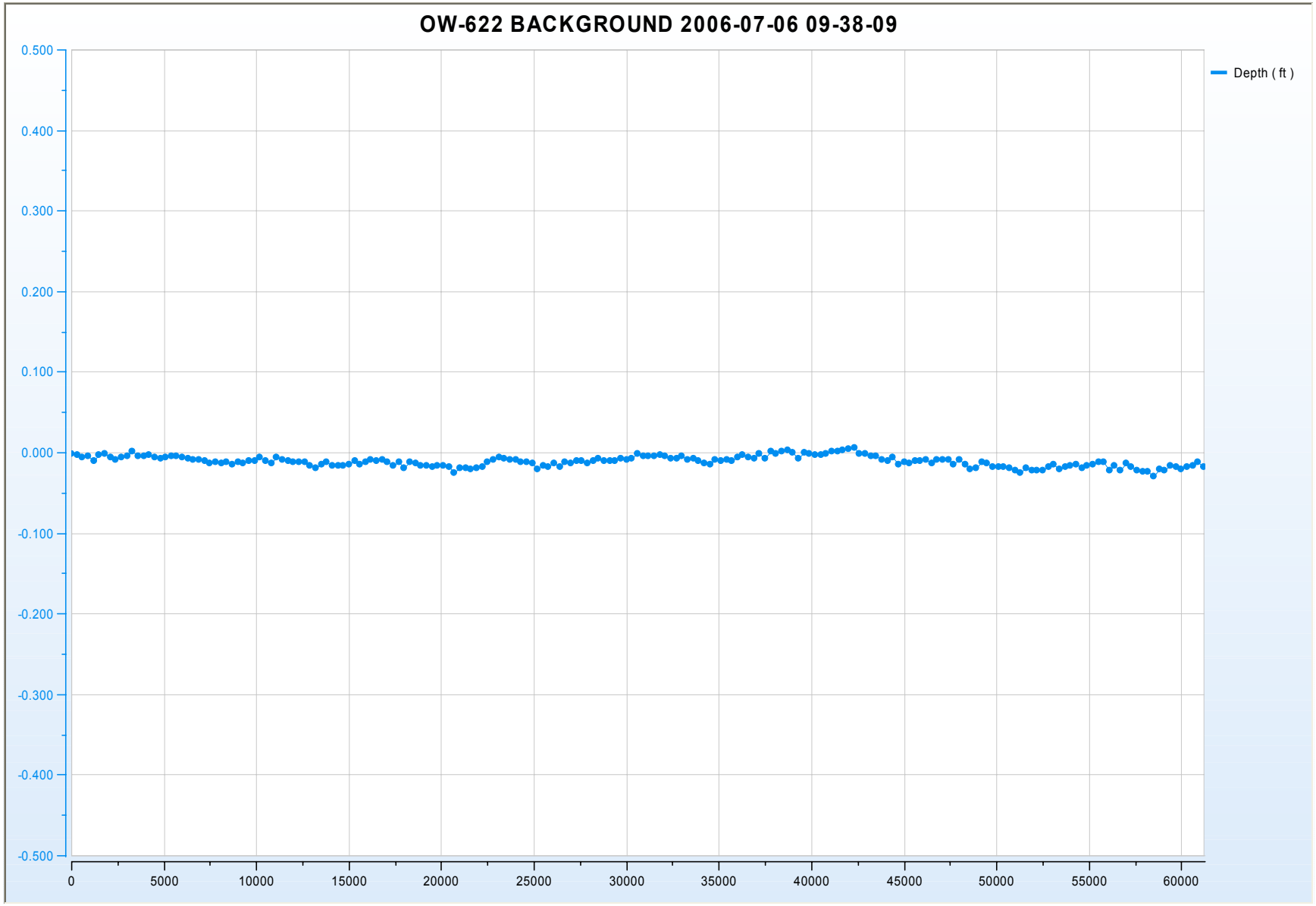

OW-621A BACKGROUND 2006-06-28 09-22-31
Depth ( ft )
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700

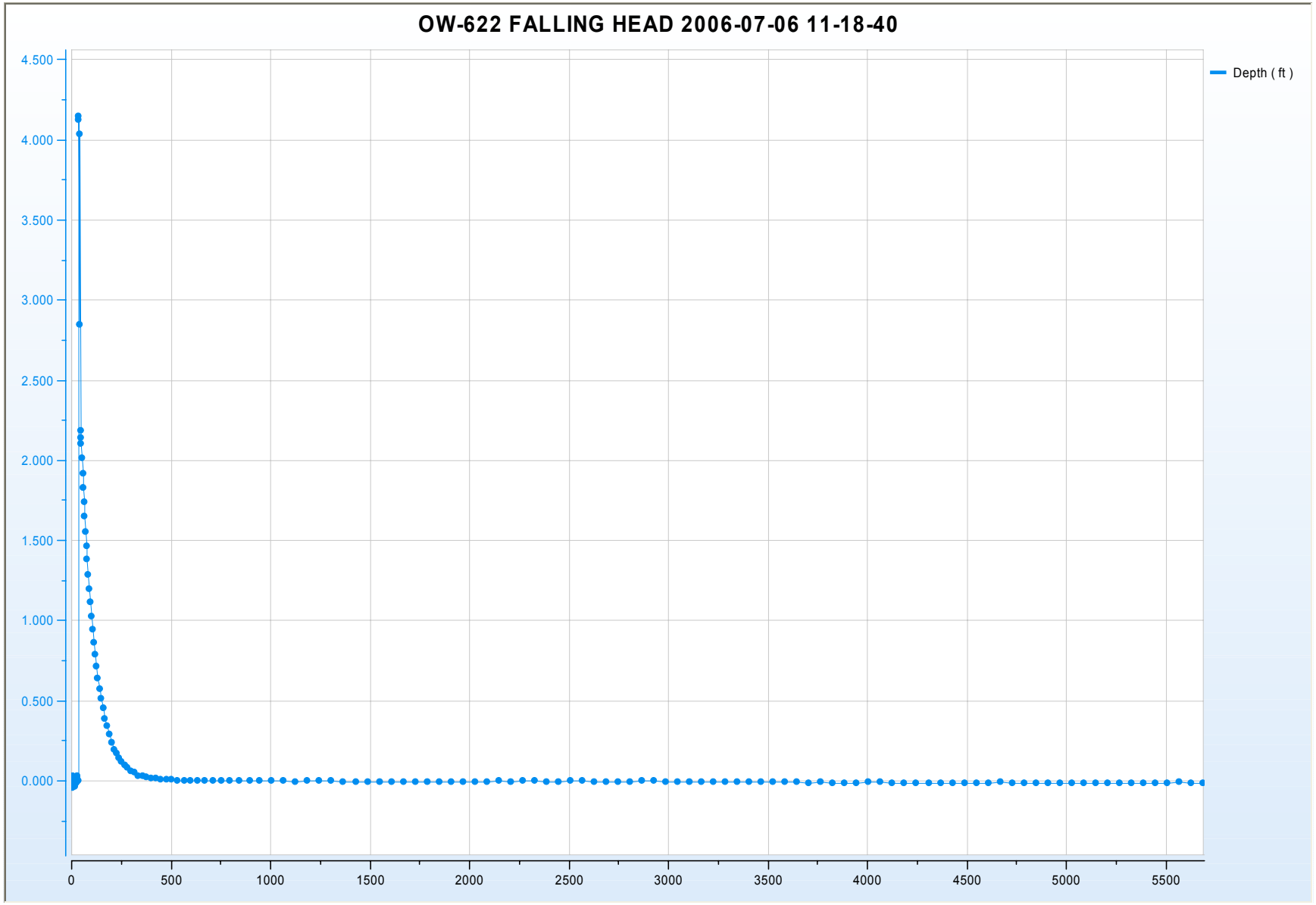

OW-621A RISING 2006-06-28 13-53-47
Depth ( ft )
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
-1.200
-1.400
-1.600
-1.800
-2.000
-2.200
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000

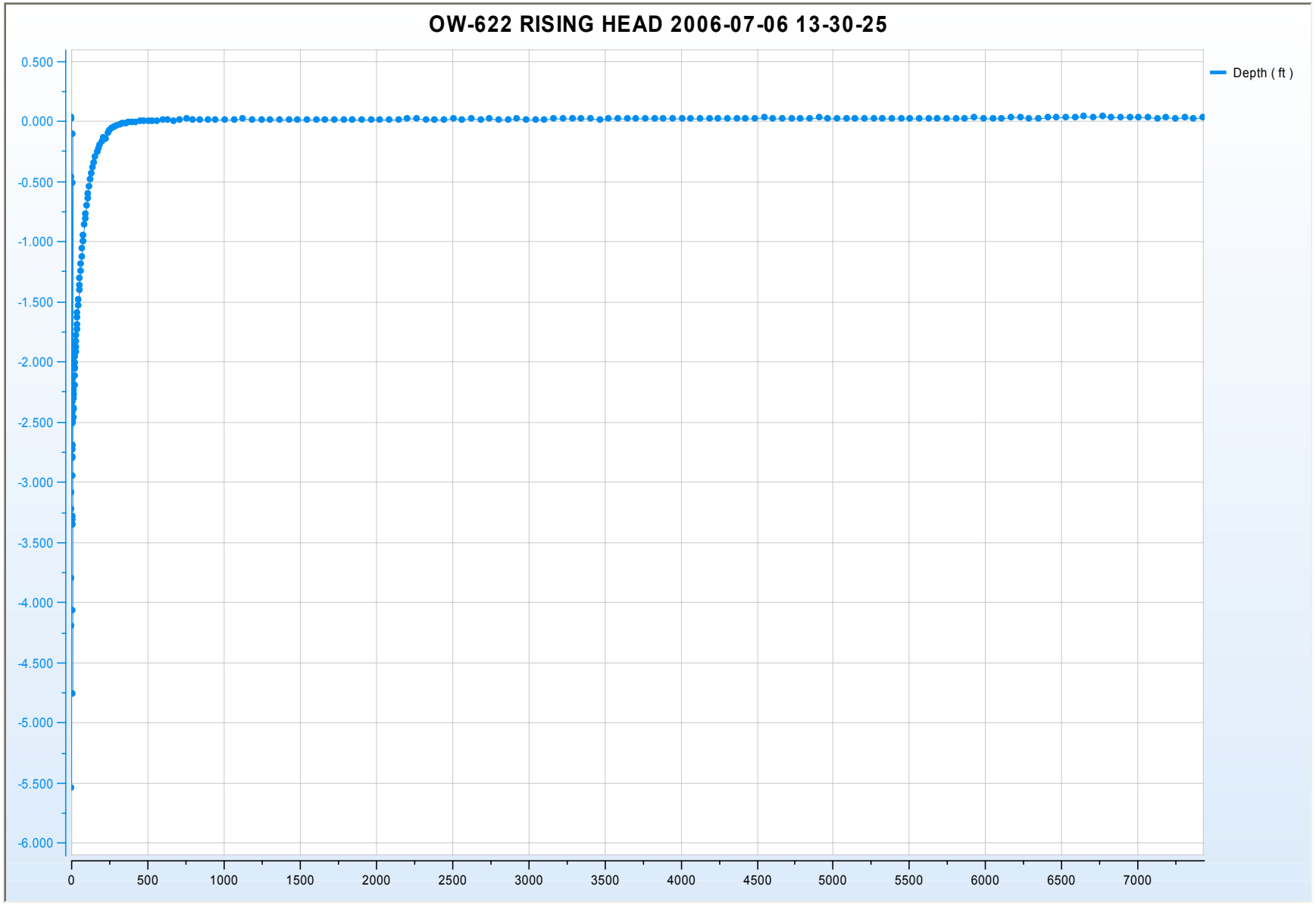

OW-621B BACKGROUND 2006-07-06 15-26-53
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
18:00:00
18:10:00
18:20:00
18:30:00
18:40:00
18:50:00
19:00:00
19:10:00
19:20:00

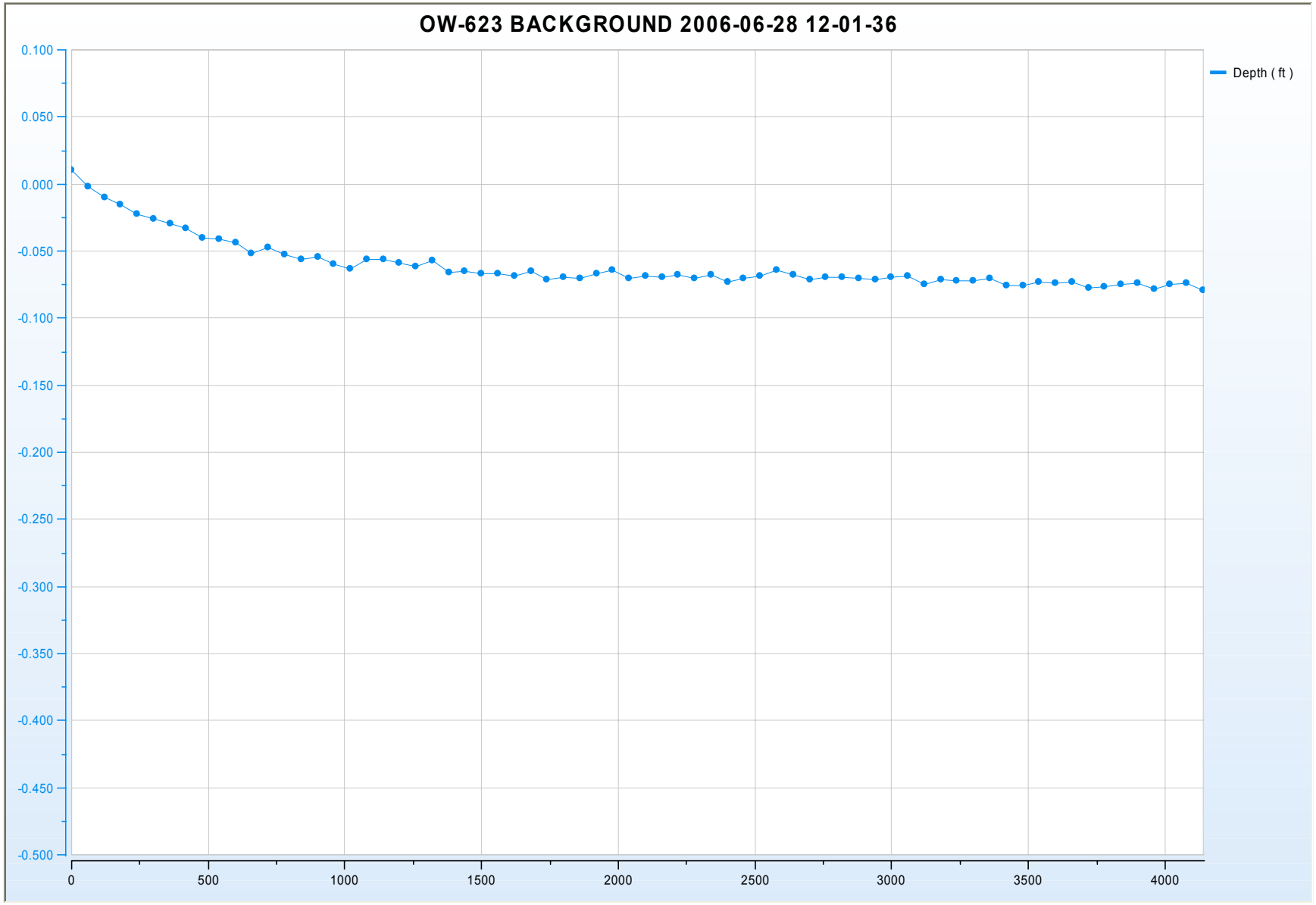

OW-621B FALLING HEAD 2006-07-06 16-25-28
Depth ( ft )
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800

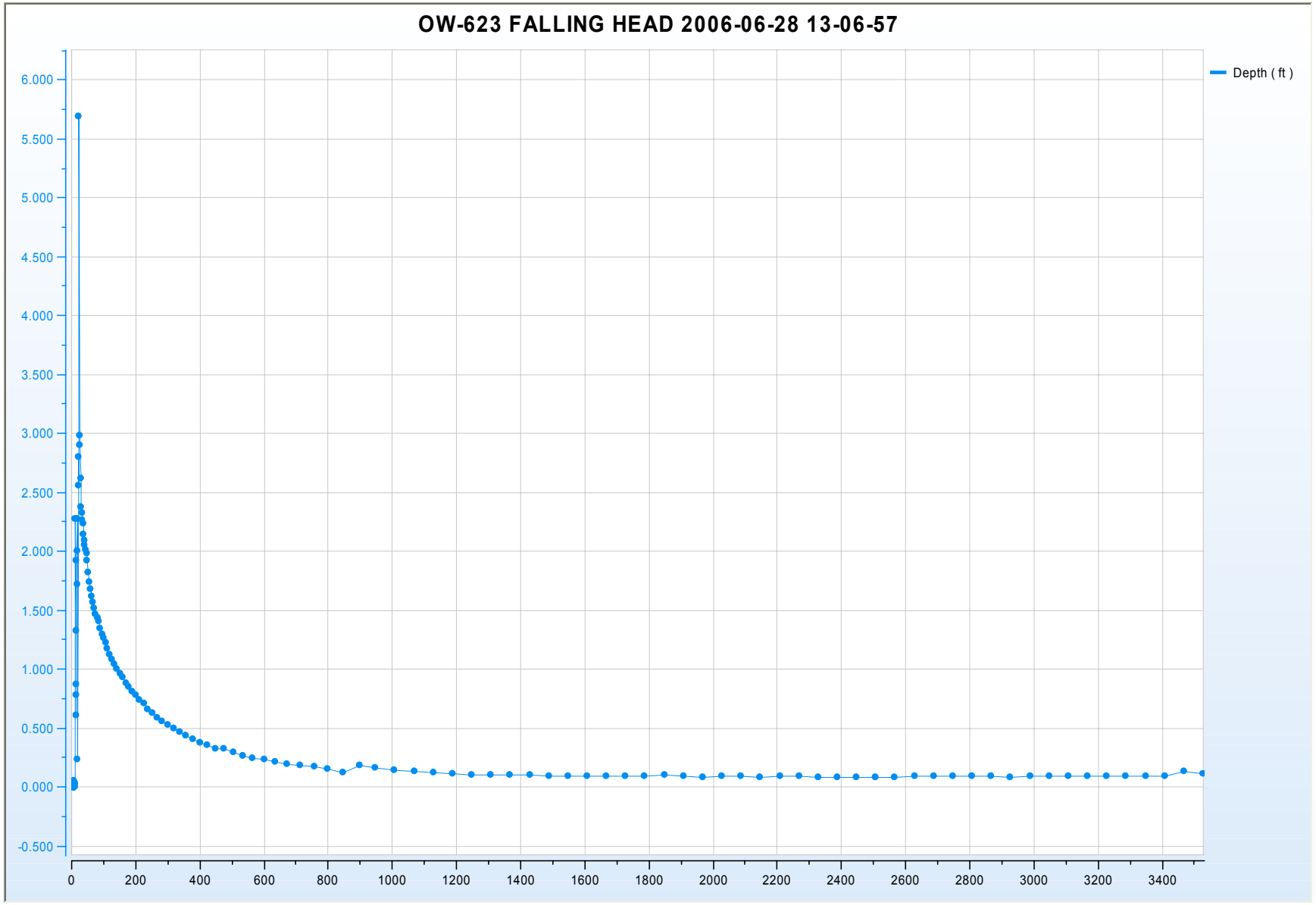

OW-621B RISING HEAD 2006-07-06 18-05-29
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
-6.000
-6.500
-7.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500

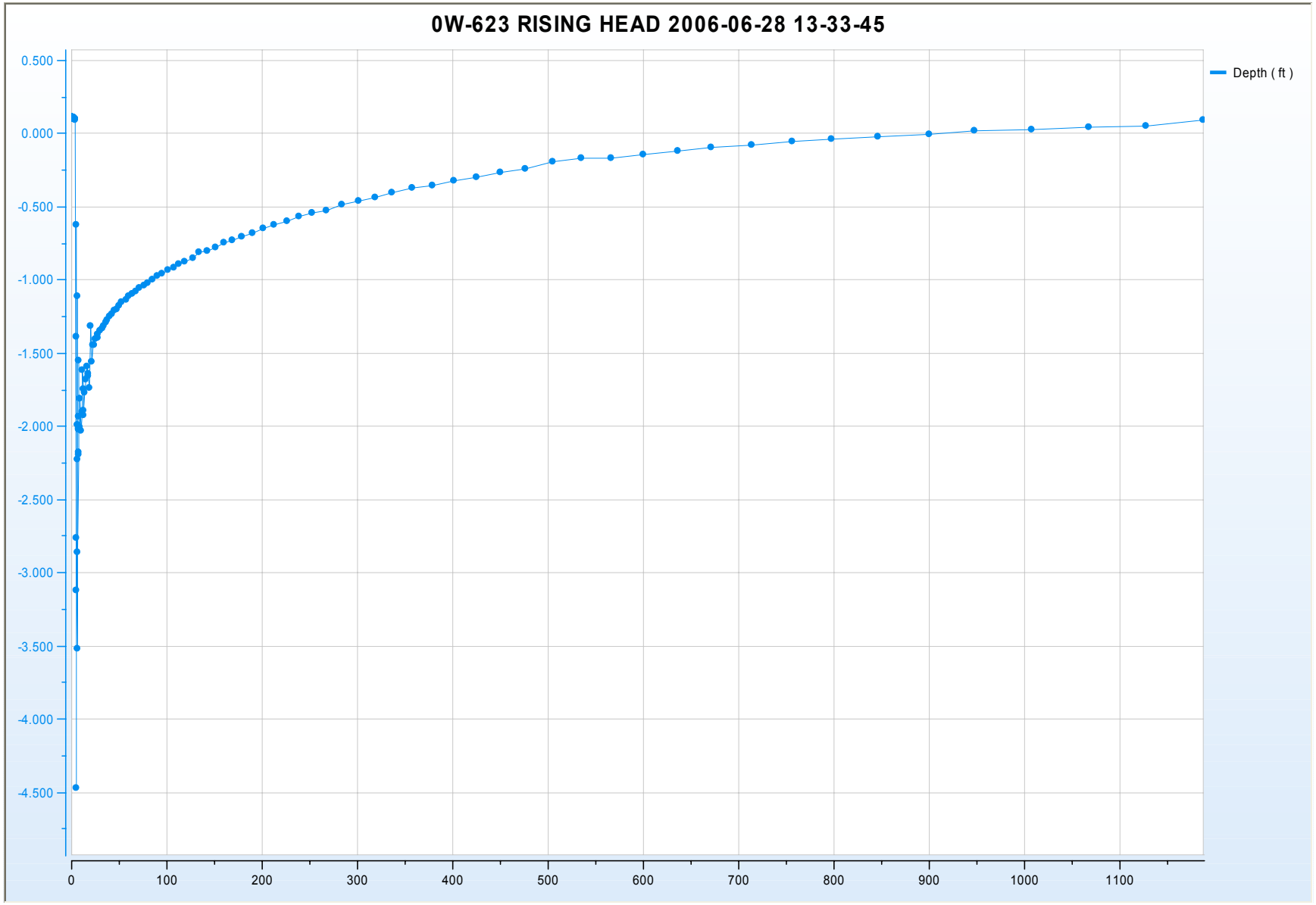

OW-622 BACKGROUND 2006-07-06 09-38-09
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000

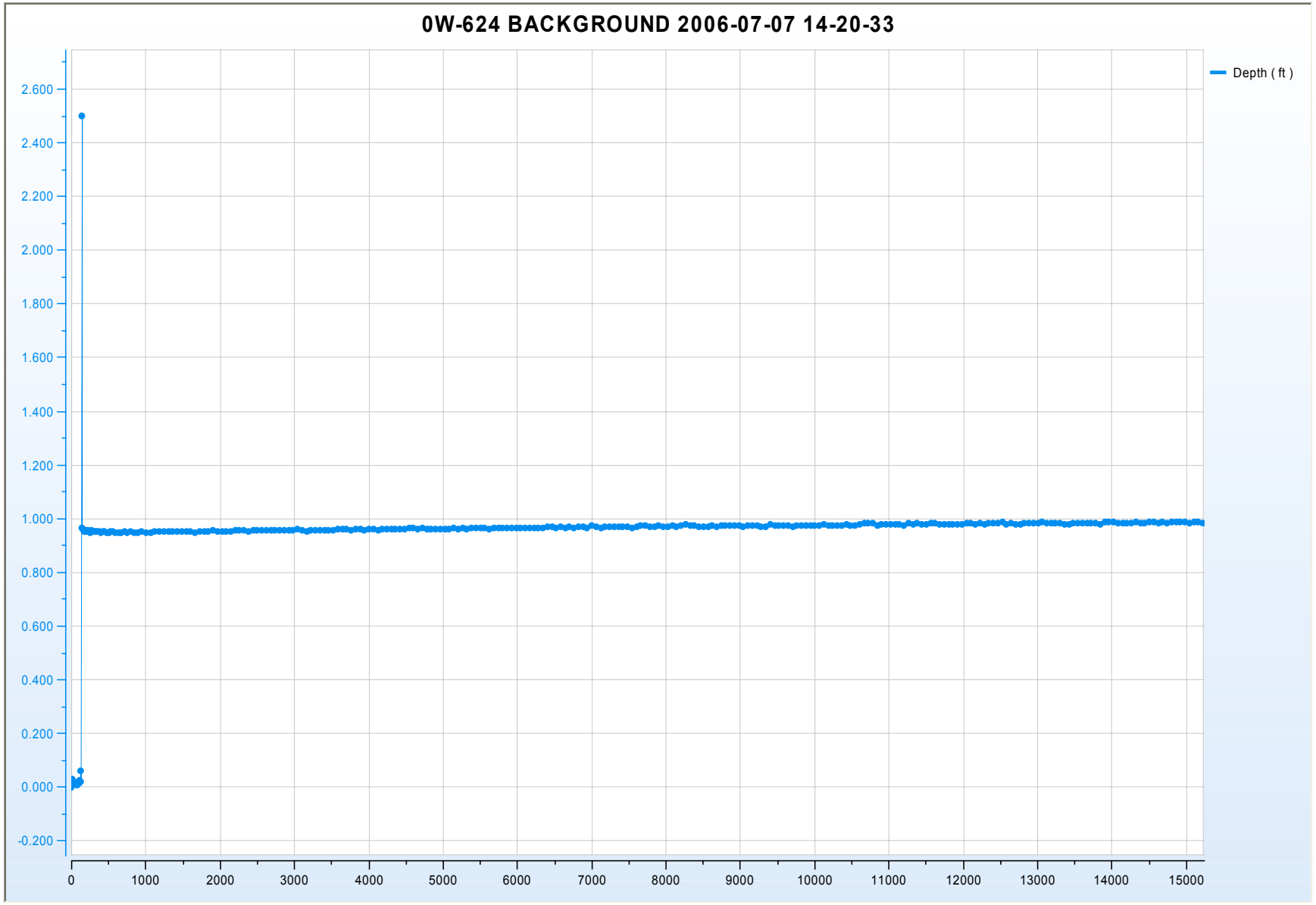

OW-622 FALLING HEAD 2006-07-06 11-18-40
Depth ( ft )
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500

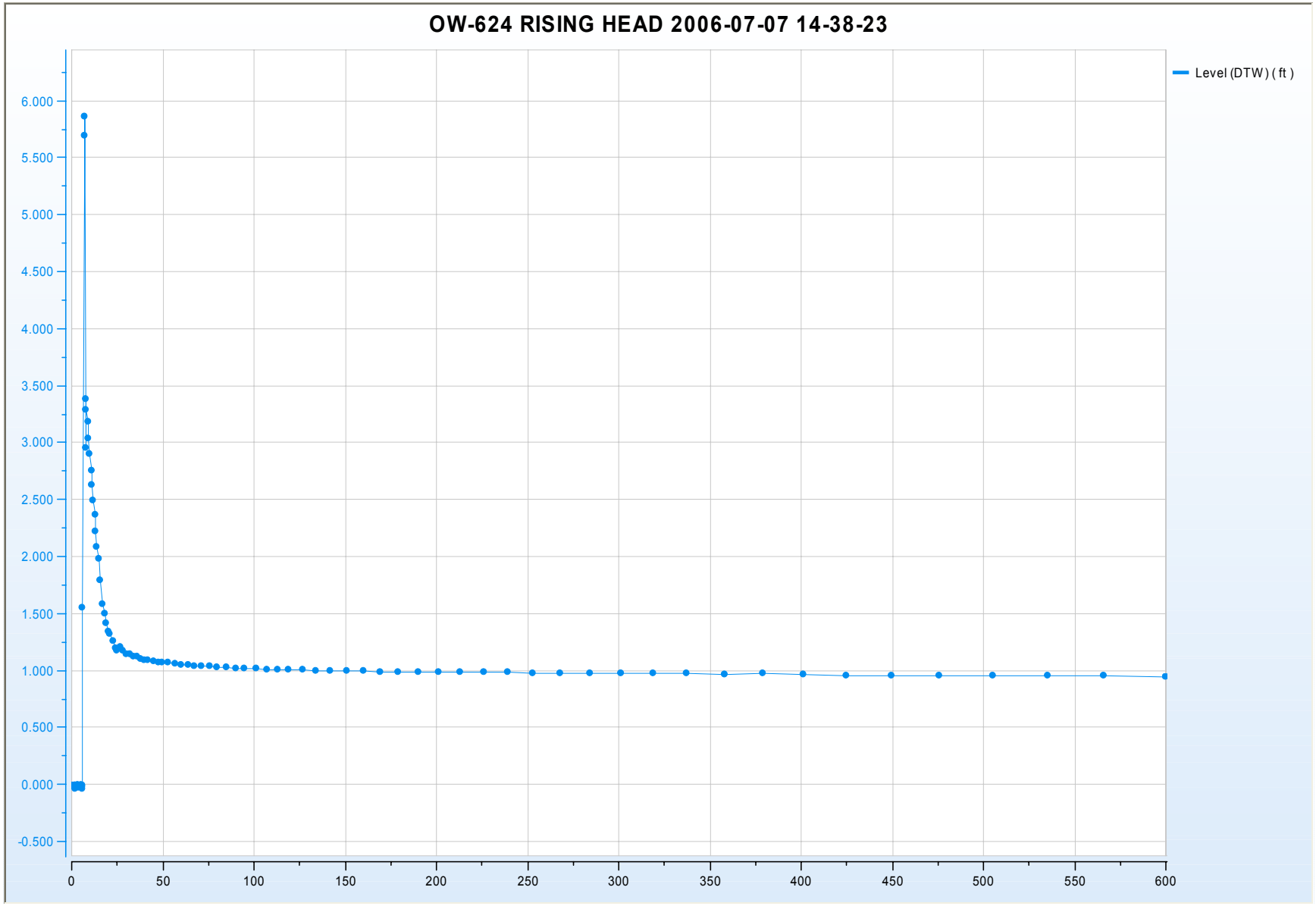

OW-622 RISING HEAD 2006-07-06 13-30-25
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
-6.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000

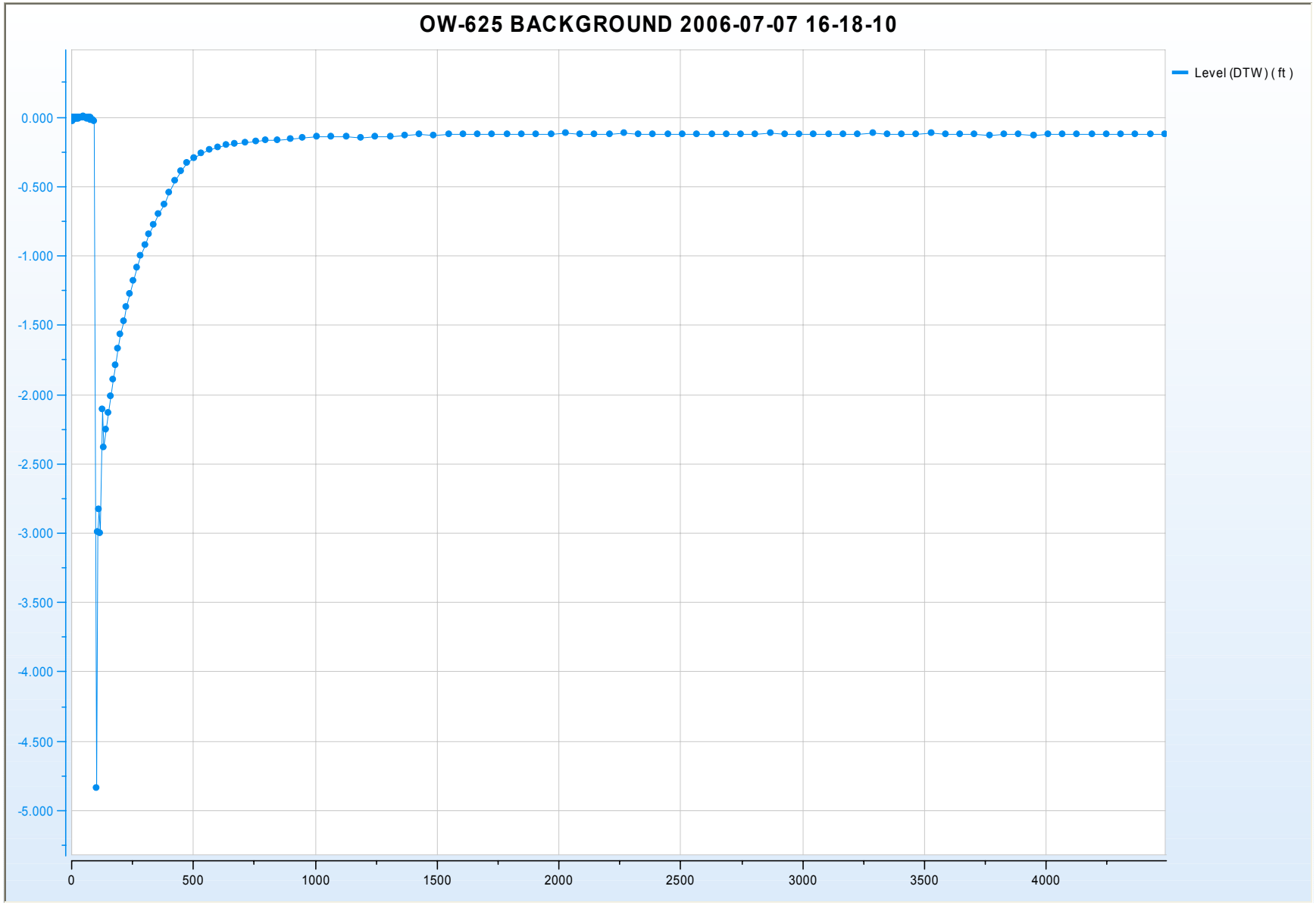

OW-623 BACKGROUND 2006-06-28 12-01-36
Depth ( ft )
0.100
0.050
0.000
-0.050
-0.100
-0.150
-0.200
-0.250
-0.300
-0.350
-0.400
-0.450
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000

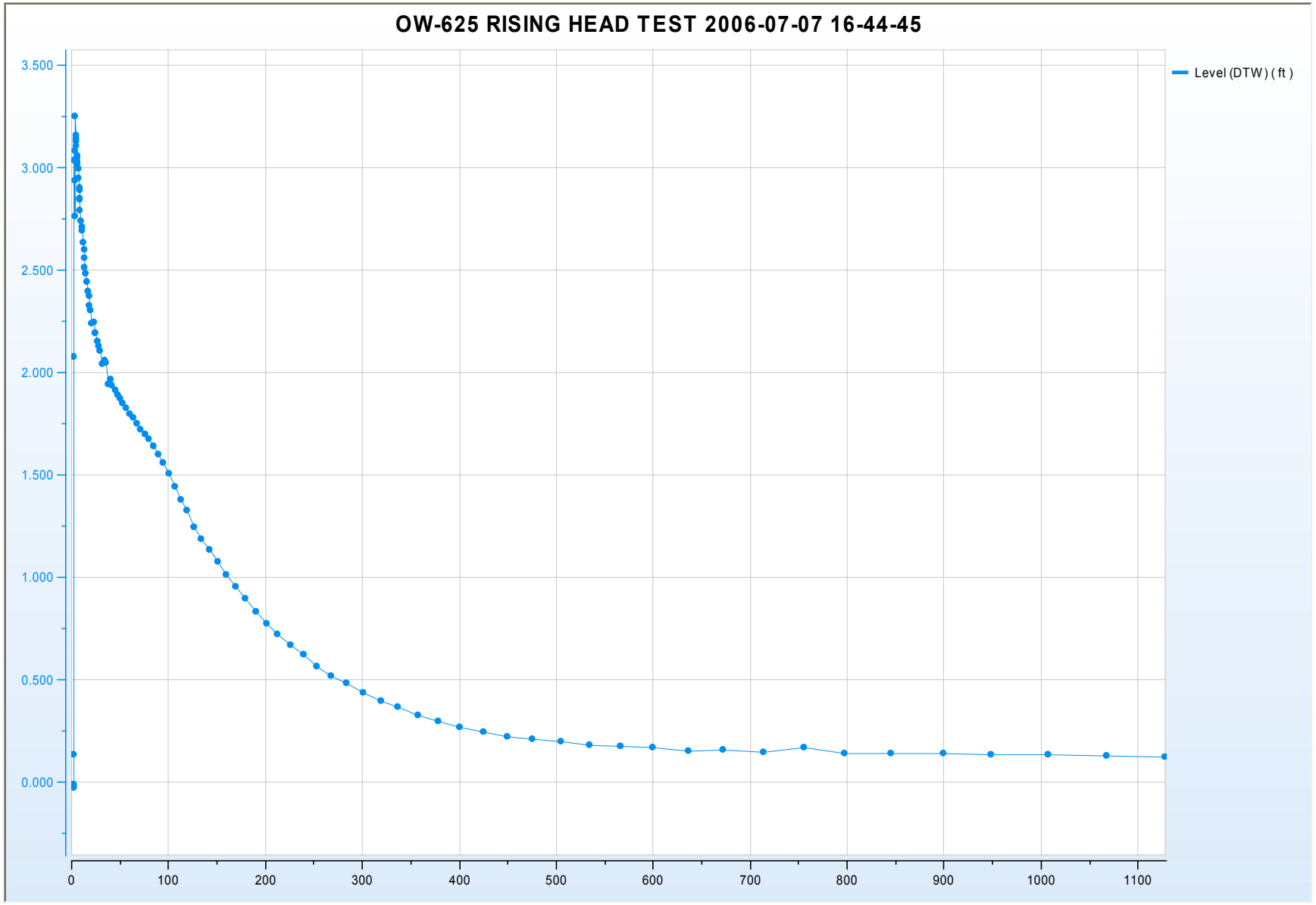

OW-623 FALLING HEAD 2006-06-28 13-06-57
Depth ( ft )
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400

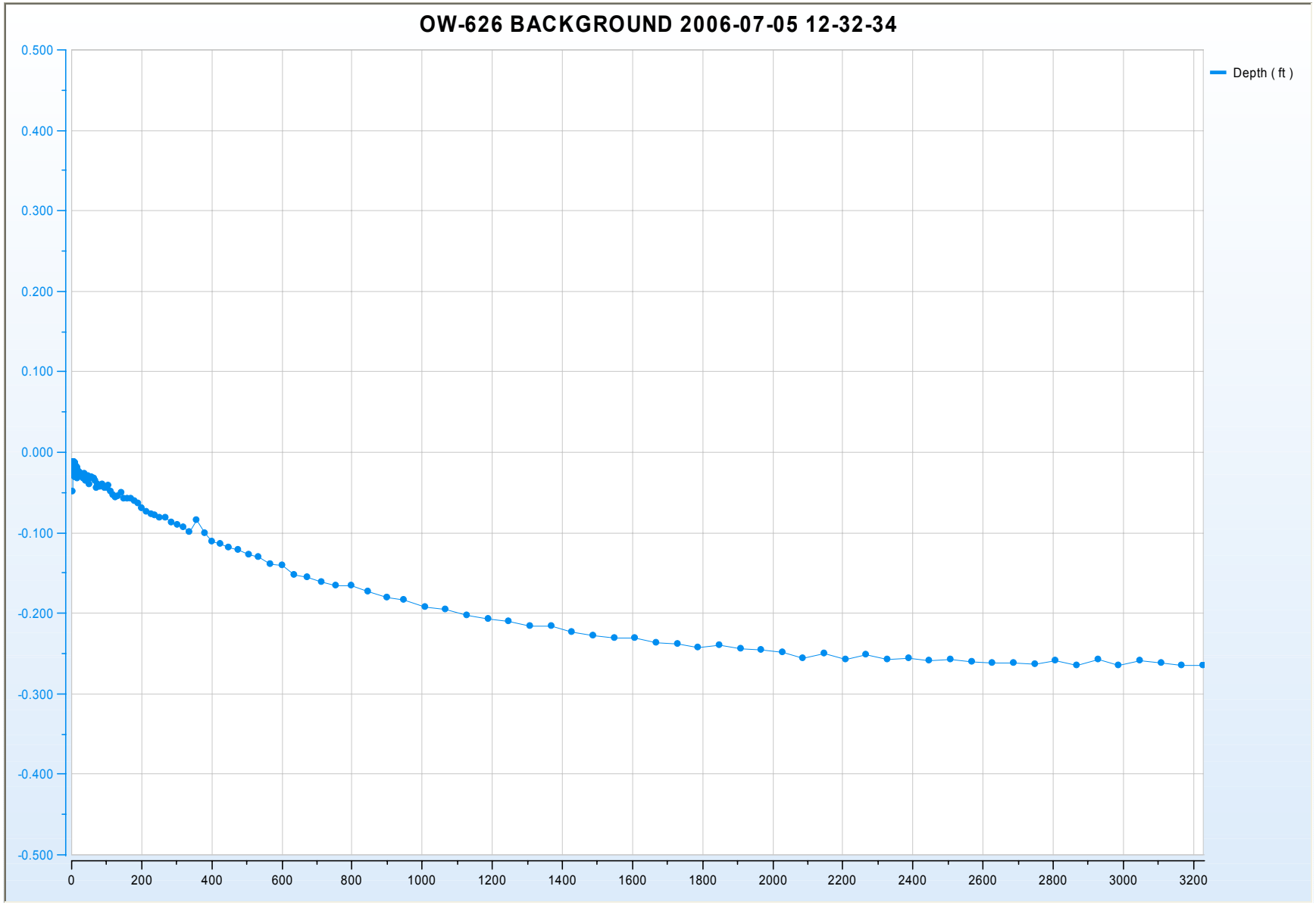

0W-623 RISING HEAD 2006-06-28 13-33-45
Depth ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
0
100
200
300
400
500
600
700
800
900
1000
1100

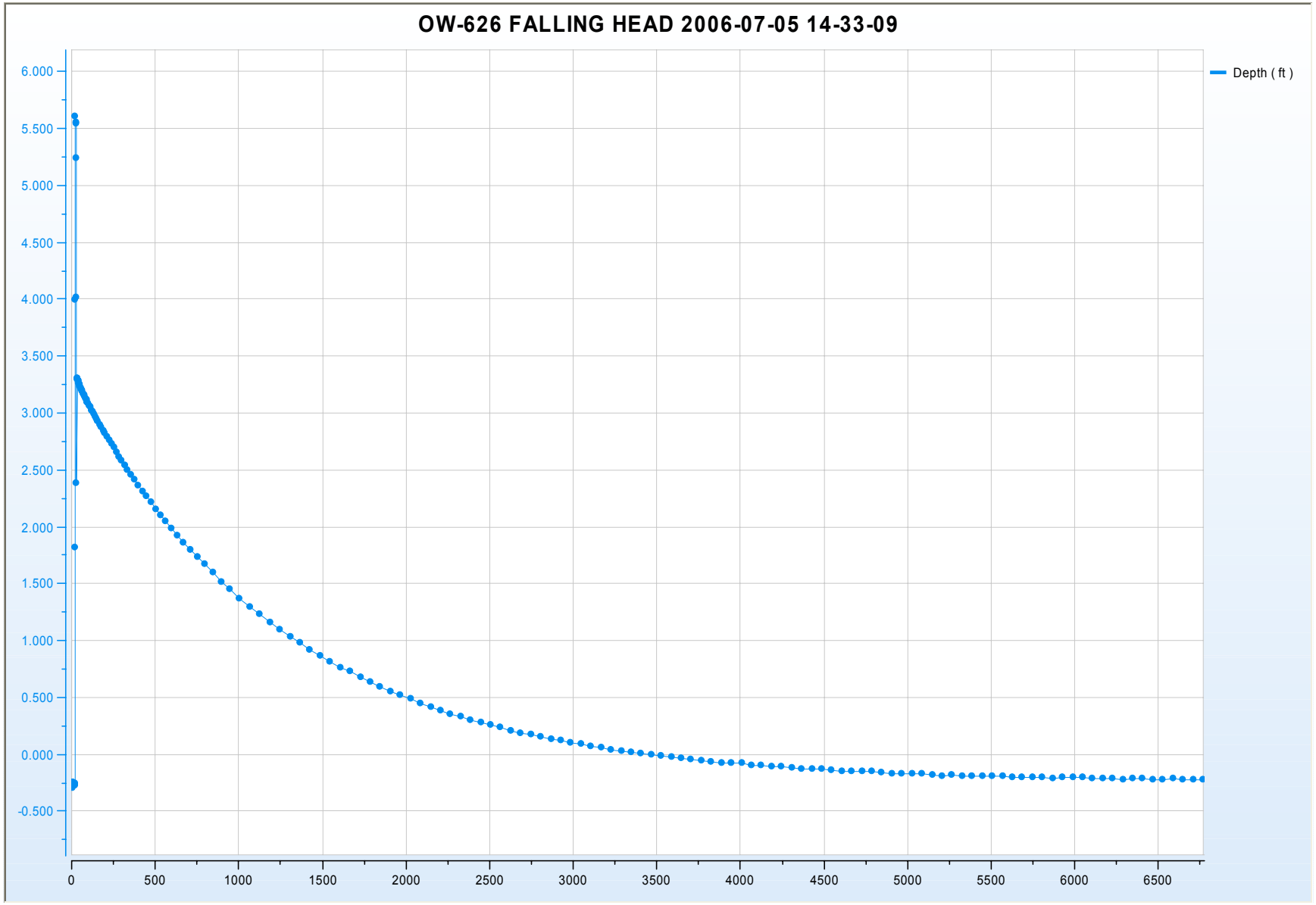

0W-624 BACKGROUND 2006-07-07 14-20-33
Depth ( ft )
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000

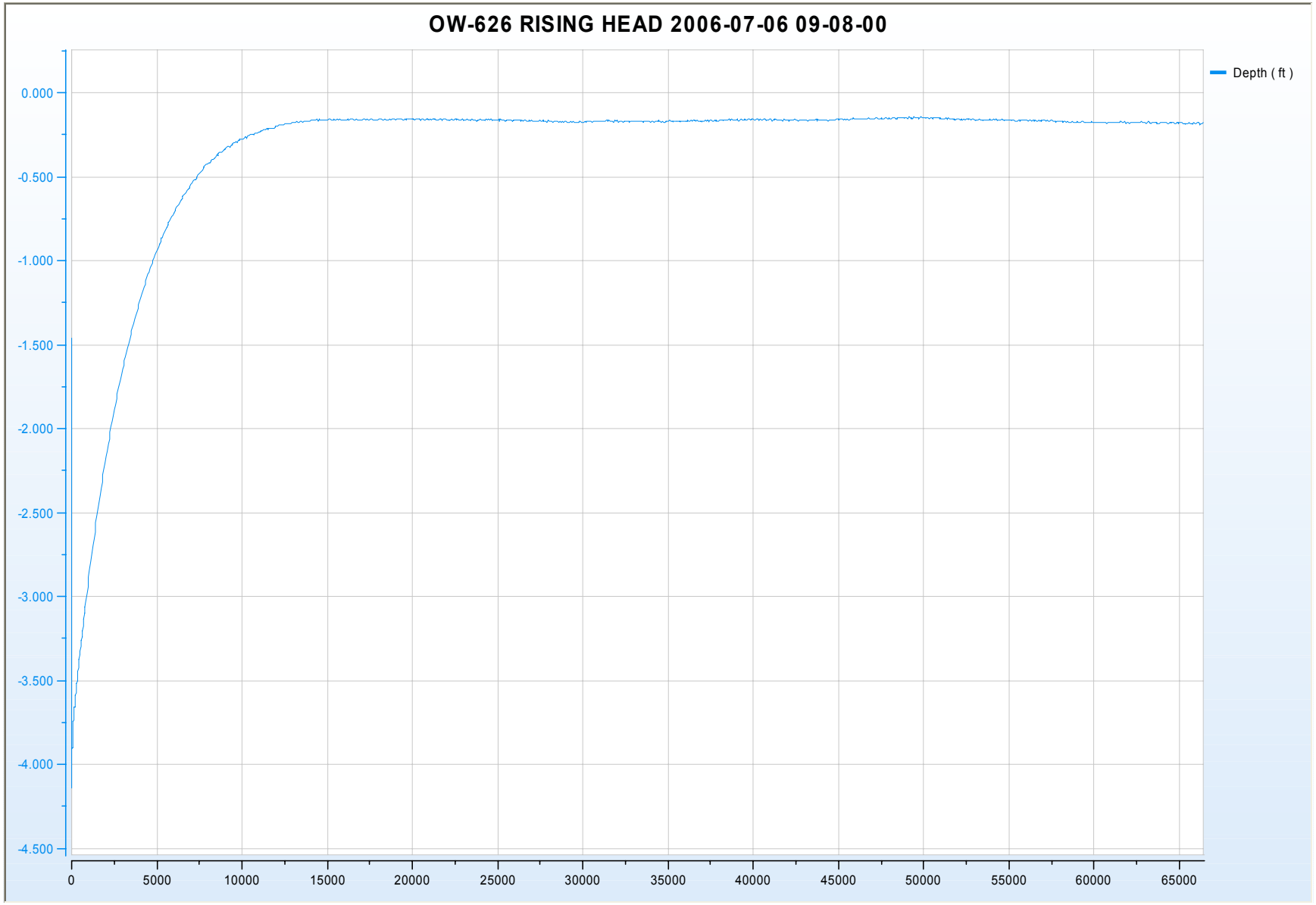

OW-624 RISING HEAD 2006-07-07 14-38-23
Level (DTW) ( ft )
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
50
100
150
200
250
300
350
400
450
500
550
600

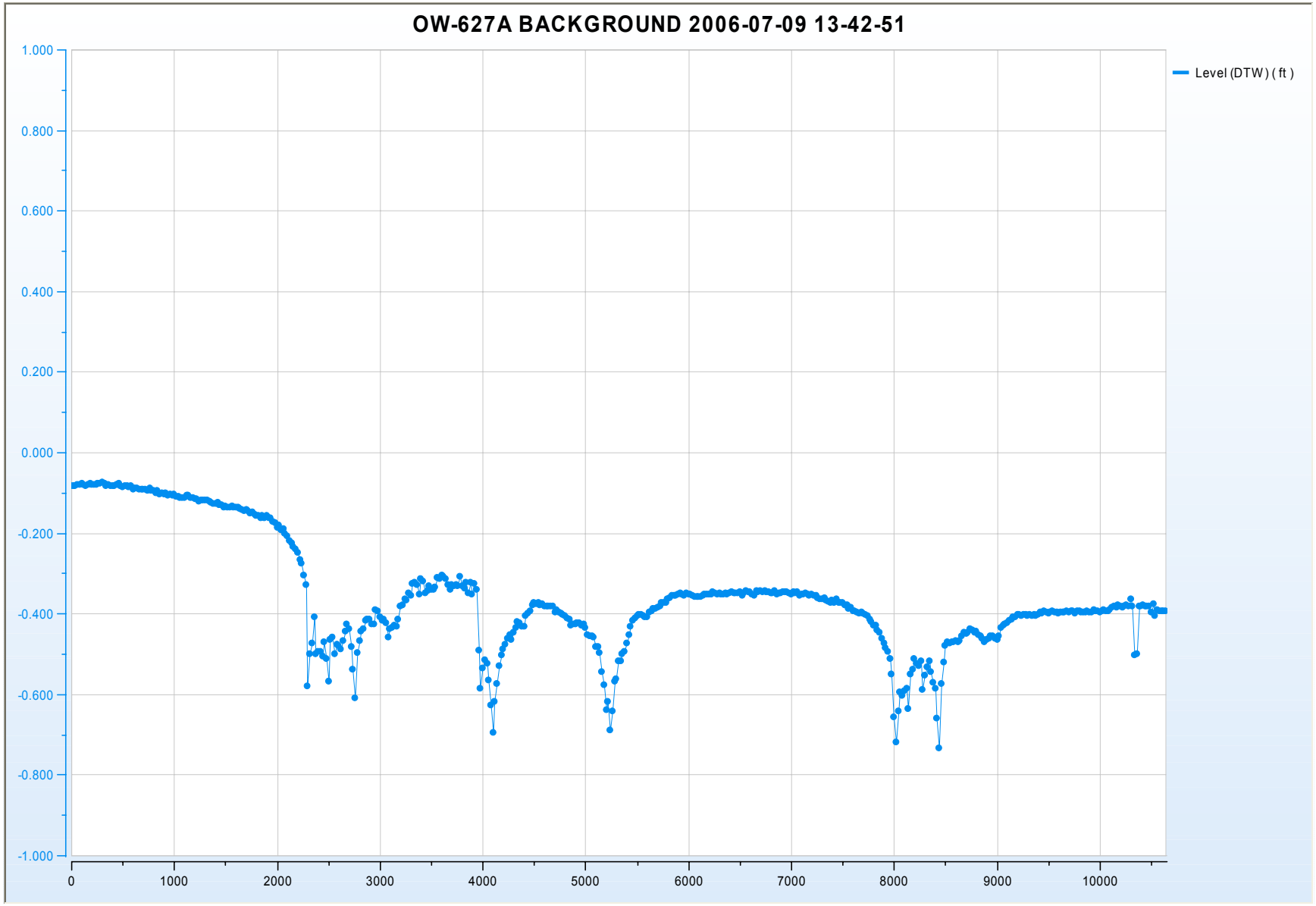

OW-625 BACKGROUND 2006-07-07 16-18-10
Level (DTW) ( ft )
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
0
500
1000
1500
2000
2500
3000
3500
4000

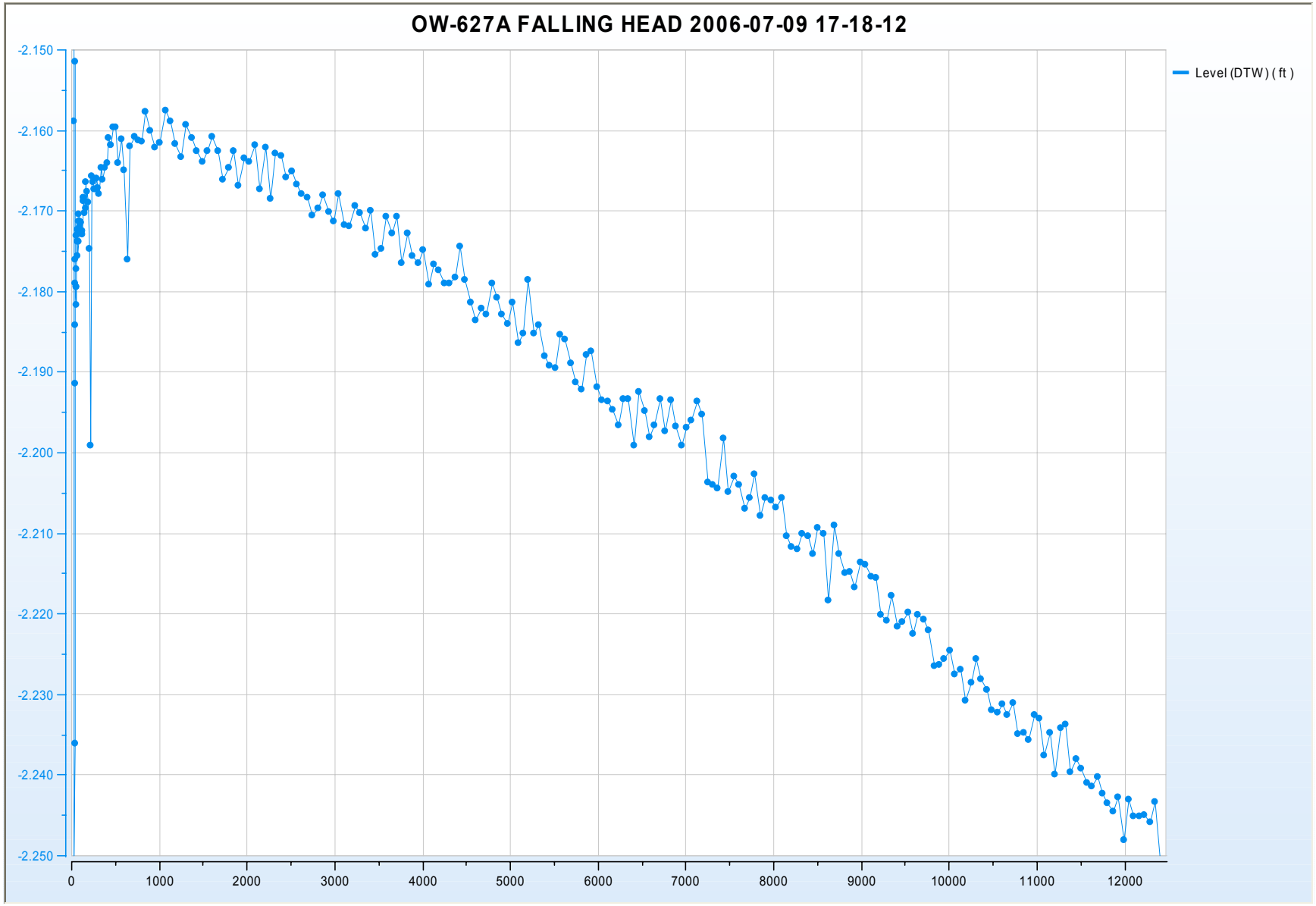

OW-625 RISING HEAD TEST 2006-07-07 16-44-45
Level (DTW) ( ft )
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
100
200
300
400
500
600
700
800
900
1000
1100

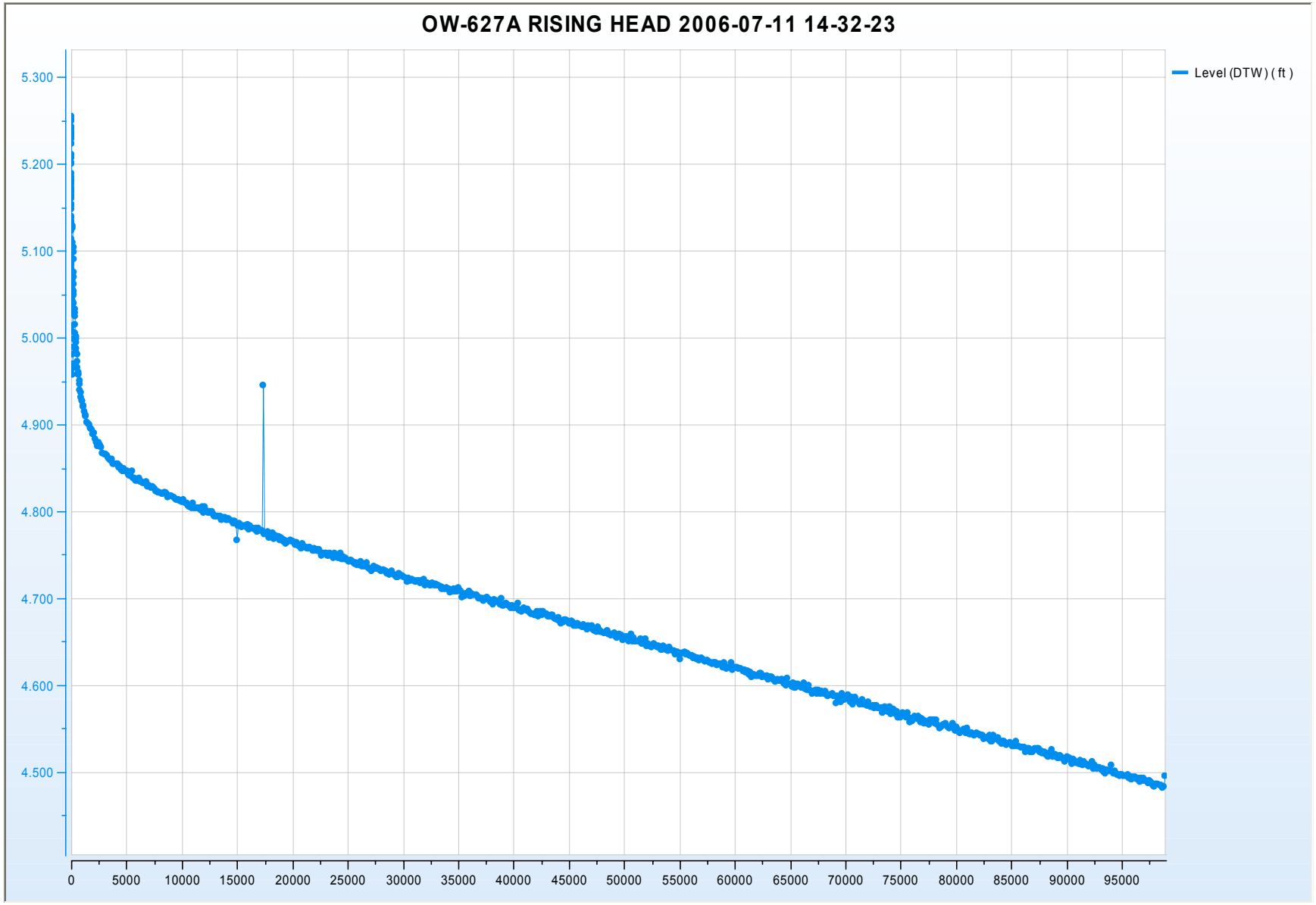

OW-626 BACKGROUND 2006-07-05 12-32-34
Depth ( ft )
0.500
0.400
0.300
0.200
0.100
0.000
-0.100
-0.200
-0.300
-0.400
-0.500
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200

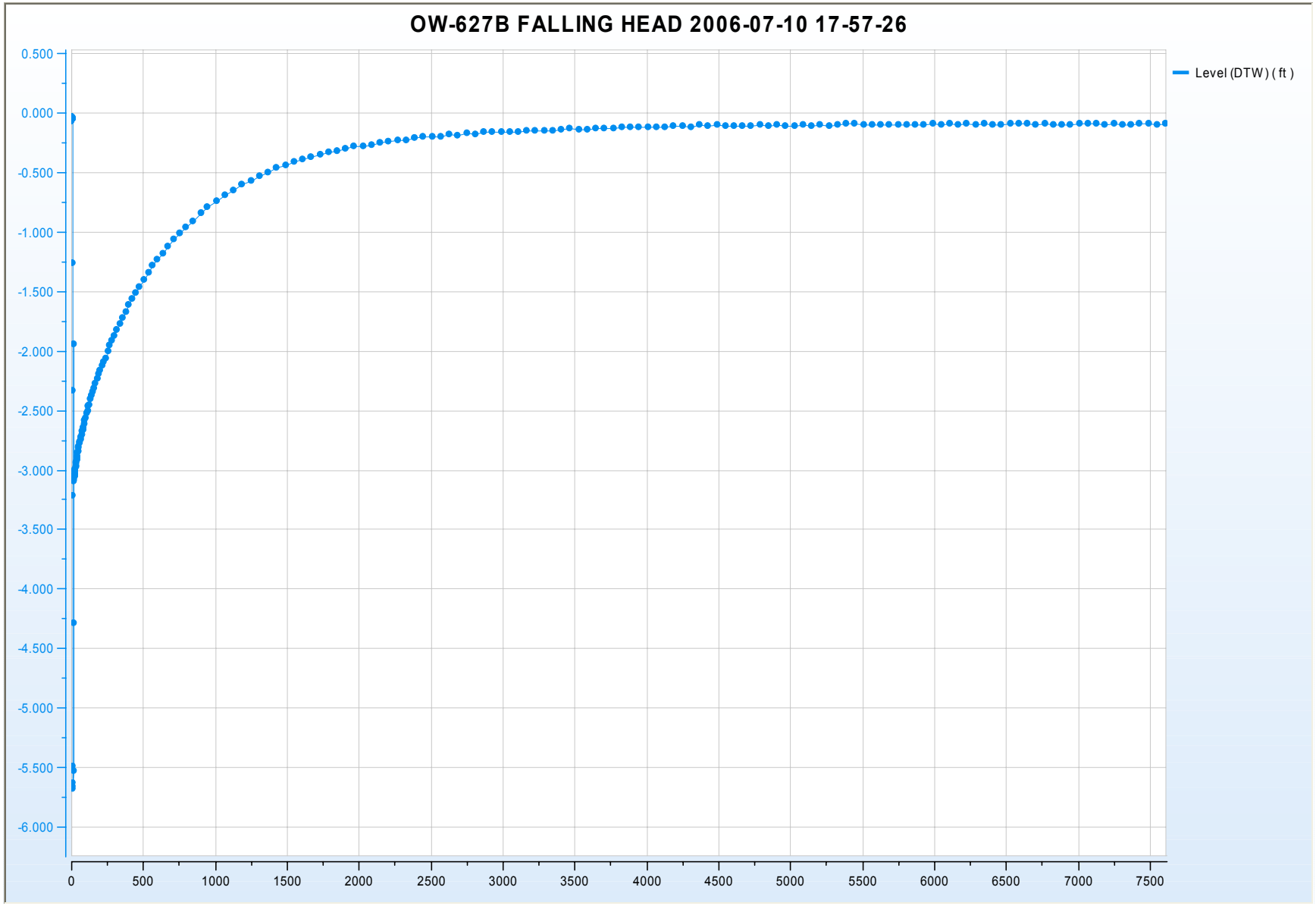

OW-626 FALLING HEAD 2006-07-05 14-33-09
Depth ( ft )
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500

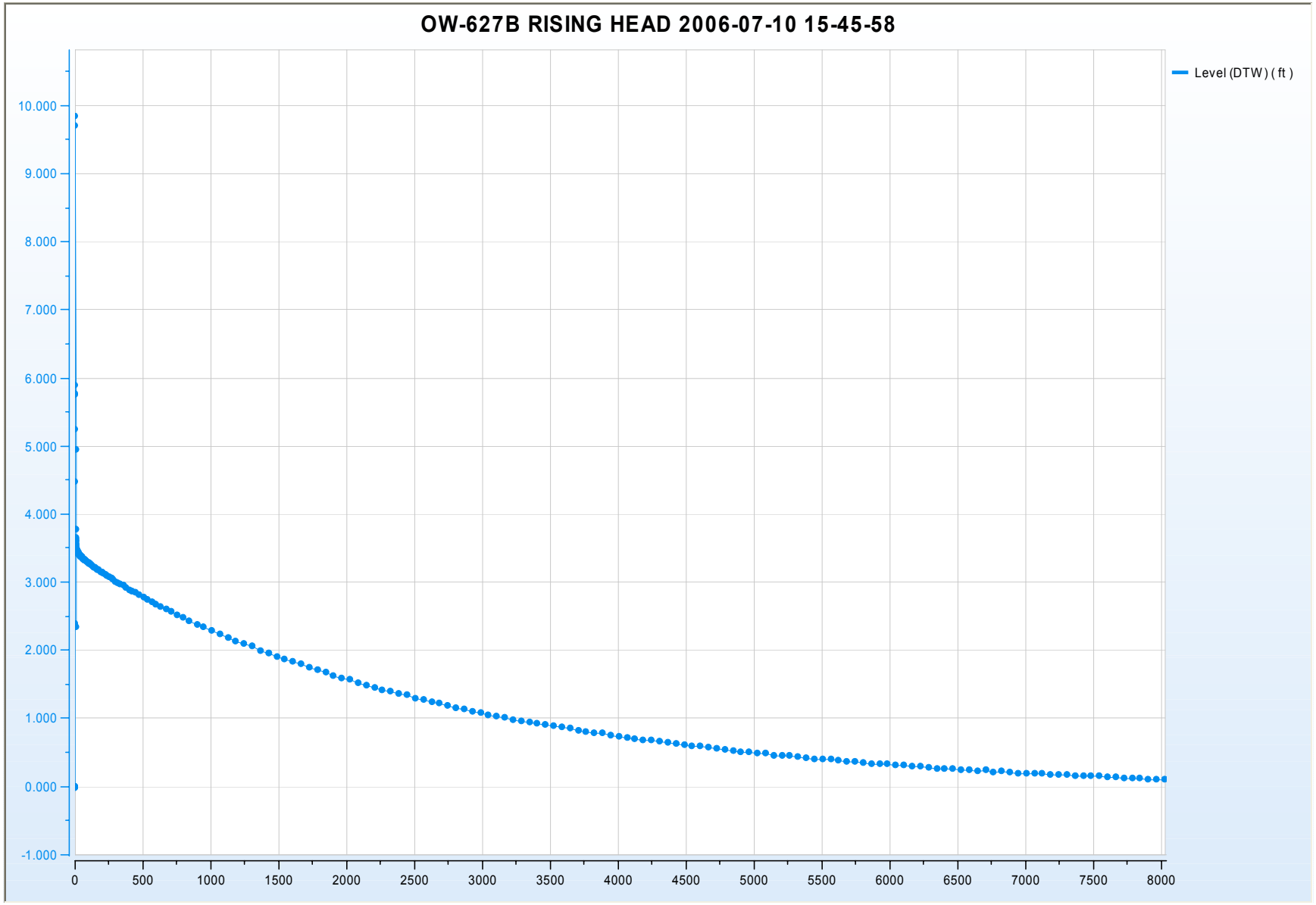

OW-626 RISING HEAD 2006-07-06 09-08-00
Depth ( ft )
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000
65000


OW-627A BACKGROUND 2006-07-09 13-42-51
Level (DTW) ( ft )
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
-0.800
-1.000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


OW-627A FALLING HEAD 2006-07-09 17-18-12
Level (DTW) ( ft )
-2.150
-2.160
-2.170
-2.180
-2.190
-2.200
-2.210
-2.220
-2.230
-2.240
-2.250
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000


OW-627A RISING HEAD 2006-07-11 14-32-23
Level (DTW) ( ft )
5.300
5.200
5.100
5.000
4.900
4.800
4.700
4.600
4.500
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
55000
60000
65000
70000
75000
80000
85000
90000
95000


OW-627B FALLING HEAD 2006-07-10 17-57-26
Level (DTW) ( ft )
0.500
0.000
-0.500
-1.000
-1.500
-2.000
-2.500
-3.000
-3.500
-4.000
-4.500
-5.000
-5.500
-6.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500


OW-627B RISING HEAD 2006-07-10 15-45-58
Level (DTW) ( ft )
10.000
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
-1.000
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000