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Project No.: 023-6151

NY State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7016

Attn: Brian Davidson, P.E.
Project Manager

RE: SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
QUANTA RESOURCES SITE, LONG ISLAND CITY, QUEENS, NEW YORK

Dear Mr. Davidson:

On behalf of the Quanta Site Administrative Group (QSAG), Golder Associates Inc. (Golder) submitted the Remedial Investigation (RI) Report and Feasibility Study (FS) Report for the Quanta Resources Site (Site) to the New York State Department of Environmental Conservation (NYSDEC) on June 20, 2005 and July 1, 2005 respectively. Prior to approving these reports, the NYSDEC requested that a groundwater monitoring well couplet be installed off-property and downgradient of the Site. In response to this request, Golder submitted a Supplemental Remedial Investigation Activities Work Plan (Supplemental RI Work Plan) to the NYSDEC on September 28, 2005 that described the proposed installation of the groundwater monitoring well couplet. In a letter dated September 29, 2005, NYSDEC approved the RI "contingent upon the completion of the commitments offered in the September 28, 2005 correspondence from Doreen Simmons to Rosalie Rusinko and the attached Technical Memorandum from Golder Associates (Supplemental RI Work Plan) dated September 27, 2005 regarding downgradient well sampling.

Consistent with the Supplemental RI Work Plan and conversations with NYSDEC, the results from the Supplemental RI are to confirm the conclusions made in the RI Report that light non-aqueous phase liquid (LNAPL) observed at the Site has only minimally impacted groundwater downgradient of the Site and that groundwater from Site will not adversely impact down gradient human or ecological receptors. Specifically, the RI Report (June 2005) concluded (see Executive Summary, page ES-8):

"Even without considering other attenuation mechanisms, such as mixing of smear zone groundwater with the lower groundwater, attenuation within Newtown Creek sediments prior to discharge to the creek, or mixing directly with surface water in Newtown Creek, the chemical impacts identified within the [LNAPL] smear zone groundwater on the Quanta Resources property do not threaten Newtown Creek. With respect to volatilization of groundwater constituents, based on the data obtained during the RI, it appears that VOC and SVOC concentrations detected in groundwater would not pose a soil vapor intrusion concern for current and future commercial/industrial buildings. Consequently, groundwater beneath the Quanta Resources property area does not pose a significant threat to either on-property or off-property human or ecological receptors.

The low solubility of chemicals detected in LNAPL, and ongoing natural attenuation mechanisms occurring within groundwater, particularly within the groundwater/LNAPL smear zone interface, are effectively mitigating chemical impacts to groundwater from LNAPL. Based on the contaminant fate and transport evaluations performed, groundwater at the property does not threaten the designated use of Newtown Creek."

In summary, and as will be discussed in detail herein, the results of the Supplemental RI support the conclusion in the RI that the low solubility of chemicals detected in LNAPL and ongoing natural attenuation mechanisms occurring within groundwater, particularly within the groundwater/LNAPL smear zone interface, are effectively mitigating LNAPL chemical impacts to groundwater. Many of the chemicals detected can be attributable to background and/or upgradient sources (e.g., MTBE and TCE). Based on the contaminant fate and transport evaluations performed for the remedial investigation, groundwater at the property does not threaten the designated use of Newtown Creek.

Golder, on behalf of the QSAG, has prepared this Supplemental RI Report to present the results of the Supplemental RI conducted at the Site.

The remainder of this Supplemental RI Report consists of the following key elements:

- A summary of the Supplemental RI data acquisition activities is presented in Section 1.0;
- A summary of the geologic and hydrogeologic investigation results is presented in Section 2.0;
- A summary of the groundwater sample laboratory analyses results is presented in Section 3.0; and,
- The Conceptual Site Model updated with the results of the Supplemental RI is presented in Section 4.0.

1.0 Summary of Supplemental RI Data Acquisition Activities

The Supplemental RI was performed consistent with the procedures specified in the Supplemental RI Work Plan. Field activities commenced on October 4, 2005 and were completed on October 17, 2005. In summary, this work included:

- Groundwater monitoring wells GAGW-09S (shallow) and GAGW-09D (deep) were installed and developed on the South Capasso property approximately 30 feet southeast of well GAL-28 (installed during the RI) and approximately 200 feet from the southern boundary of the Quanta Resources property as shown on Figure 1. Drilling and well installation activities commenced on October 5 and were completed on October 8, 2005. The development of the two wells was completed on October 11, 2005.

Figure 1 shows the location of the Supplemental RI monitoring well couplet in addition to all of the soil borings and monitoring wells completed as part of the RI. Attachment A includes the boring and well installation logs and Attachment B provides the well development forms for wells GWGW-09S and GWGW-09D. Table 1 provides a summary of the well construction details including wells installed during the RI.

Groundwater samples collected from wells GAGW-09S and GAGW-09D were analyzed for VOCs, SVOCs, PCBs, metals, and the Natural Attenuation Parameters (NAPs). A

sampling and analysis summary is provided in Table 2 and groundwater sampling purge forms are provided in Attachment C.

- A synoptic round of water level measurements was collected from wells GAGW-01, GAGW-02, GAGW-03, GAGW-04D, GAGW-05, GAGW-06I, GAGW-07, GAGW-08, GAGW-09S, GAGW-09D, GAL-27, GAL-28, and MW-7R on October 17, 2005. This work was completed prior to sampling of wells GAGW-09S and GAGW-09D.

The groundwater level monitoring data is presented in Table 3, which includes groundwater level data collected during the RI. The data collected on October 17, 2005 was used to construct the interpreted groundwater elevation contour map discussed in Section 2 of this report.

- The land survey of monitoring wells GAGW-09S and GAGW-9D was completed on October 17, 2005.

Drilling and well installation services were provided by AmeriDrill of Levittown, Pennsylvania, a New York State licensed driller. Laboratory services were provided by STL of Edison, New Jersey. Land surveying services were provided by GEOD Corporation of Newfoundland, New Jersey.

Investigation derived waste (IDW) generated from the Supplemental RI activities were contained in DOT approved 55-gallon drums and staged on the Quanta Resources property for temporary storage and subsequent off-property disposal.

2.0 Summary of Geologic and Hydrogeologic Investigation Results

As shown on Figure 2, Geologic Cross-Section C-C' (presented as Figure 7 in the RI Report) was revised to incorporate the geologic information obtained from the drilling of GAGW-09S and GAGW-09D. A detailed description of the Site geology is presented in Section 4.0 of the RI Report (Golder, June 2005).

In summary, the subsurface materials encountered during the drilling of GAGW-09S and GAGW-09D are consistent with the subsurface material observations made during the RI. The installation of these two new wells confirmed the presence of a clay horizon encountered at GAL-27 and GAL-28, which were installed during the RI. The supplemental RI drilling also confirmed the presence of the Lower Clay Unit (Raritan formation), which further substantiates that this clay is continuous across the Quanta Resources and adjacent properties as described in the RI Report. The following briefly summarizes observations made during the drilling of monitoring wells GAGW-09S and GAGW-09D (refer to Figure 2):

- A clay horizon was encountered at GAGW-09S and GAGW-09D at a depth of 21.5 feet below ground surface (bgs) (-8.2 feet Mean Sea Level (MSL)) and at a thickness of approximately 4 feet thick. It is believed that this same clay horizon was also encountered at GAL-28 at a depth of 23 feet bgs (-10.5 feet MSL) and at thickness of 2.5 feet and at GAL-27 at a depth of 18 feet bgs (-5.0 feet MSL) and at a thickness of six feet. In addition, a near surface silt and silty sand horizon was encountered at well GAL-27 and GAL-28. It is believed that the combination of these lower permeability horizons result in local and seasonally transient perching of groundwater in this area.

- The Lower Clay Unit (Raritan formation) was encountered at 70.5 feet bgs (-57.2 MSL) at GAGW-09D. During the RI, the Lower Clay Unit was encountered at depths ranging from 71 feet bgs (-45 feet MSL) to 85 feet bgs (-61 feet MSL).

Figure 3 presents a groundwater contour map interpreted from a synoptic round of water levels taken on October 17, 2005¹ from both the deep and shallow groundwater monitoring wells (refer Table 2). Notably, Figure 2 presents groundwater flow directions on a cross sectional view based on the same groundwater level information used to construct the interpreted contours on Figure 3.

The direction of groundwater flow within the glacial deposits above the Lower Clay Unit is south-southwest to southwest, which is consistent with the groundwater flow direction presented in the RI Report. As shown on Figures 2 and 3, there is a localized groundwater mound, which is believed to be the result of the presence of lower permeability materials encountered at GAL-27 and GAL-28. The groundwater flow in the shallow glacial deposits, while locally influenced by the mound, follows an overall path consistent with the deeper horizons. In summary, the data obtained from the Supplemental RI has been used to refine the understanding of geologic and hydrogeologic conditions downgradient of the Site and supports the hydrogeologic model presented in Section 4.3 of the RI Report, which can be summarized as follows:

- The groundwater flow direction in the glacial deposits ranges between south-southwest and the southwest;
- The horizontal gradients are flat (on the order of 0.0015 ft/ft) increasing slightly further to the southwest (0.009 ft/ft) in the vicinity of well GAGW-09D;
- Vertical gradients are minimal within the Quanta Resources property (well couplet GAGW-06I and GAGW-02) where near horizontal flow is anticipated. Vertical gradients are upward as groundwater approaches its discharge to Newtown Creek as observed at well couplet GAGW-09S and GAGW-09D (on the order of 0.006 ft/ft); and,
- A groundwater mound, which is believed to be seasonally transient, is present on the South Capasso property, as defined by wells GAL-27 and GAL-28. While this mound locally influences shallow groundwater flow, this mound does not appear to materially influence the overall direction of groundwater flow within the shallow glacial deposits from the Quanta Resources property to Newtown Creek. When the mound is present, it may influence the three-dimensional flow path of groundwater in the immediate vicinity of the mound and these impacts quickly diminish with depth and distance from the mound. Whether the mound is present or not, all groundwater at the Quanta Resources property flows in a generally straight path from the Site towards Newtown Creek.

3.0 Summary of Groundwater Sample Analyses Results

Groundwater samples were collected from each of the wells (GAGW-09S and GAGW-09D) and were analyzed for VOCs, SVOCs, PCBs, metals and NAPs as described in Table 3. Tables 4A through 4E present a summary of the groundwater sample analyses results for VOC, SVOC, PCB, metals and natural attenuation parameters, respectively. For completeness, these tables also present the groundwater data that was obtained during the RI.

The laboratory sample analyses results were compared to New York State Department of Environmental Conservation (NYSDEC) Technical & Operational Guidance Series (TOGS) 1.1.1 Class GA (groundwater) standards and guidance values, collectively referred to as TOGS 1.1.1

¹ Refer to RI Report Figure 11 which presents an interpreted groundwater contour map from a synoptic round of water levels taken on July 24 and August 31, 2004 and Figure 12, which presents an interpreted groundwater contour map from a synoptic round of water levels collected on April 19, 2005.

GA criteria. The TOGS 1.1.1 GA criteria include constituents that have a groundwater standard in 6 NYCRR Part 703, as well as constituents that have NYSDEC guidance values. Based on a review of the TOGS 1.1.1 GA criteria documentation, Class GA standards are based on the protection of groundwater for use as drinking water. However, groundwater in the near vicinity of the Quanta Resources property is not utilized for drinking water purposes. Both properties are served by a public water supply system. In fact, the nearest groundwater source used for drinking is expected to lie several miles from the Quanta Resources property². Therefore, comparing the on-property and off-property groundwater sample analysis results to the TOGS 1.1.1 GA criteria is a very conservative screening approach since the exposure pathway used to develop the TOGS 1.1.1 GA criteria (groundwater as drinking water) is not applicable. Nonetheless, the groundwater sample analyses results have been compared to the TOGS 1.1.1 GA criteria.

As discussed in Section 2.0 of this report, and as presented in the hydrogeologic model discussed in the RI Report, groundwater flow beneath the Quanta Resources Site is generally to the southwest or south-southwest and ultimately discharges to Newtown Creek, a NYSDEC listed Class SD surface water body. As stated in 6 NYCRR Part 701, Class SD is the lowest classification for saline surface water, suitable only for fish survival and fishing³. Therefore, the results of the groundwater sample analyses have also been compared to TOGS 1.1.1 Class SD surface water quality standards to assess whether any meaningful potential exists for groundwater underlying the Quanta Resources property to adversely impact Newtown Creek surface water, based on the assigned SD classification. This is another conservative screening comparison since natural attenuation mechanisms will reduce groundwater impacts that potentially originate from the Quanta Resources property prior to the discharge of groundwater to Newtown Creek (refer to Section 5.2.3 of the RI Report).

Deep monitoring well GAGW-09D is screened over the same hydrogeologic interval as the other deep groundwater monitoring wells installed during the RI. As discussed in the RI Report, deep groundwater monitoring wells GAGW-07 and GAGW-08 are located on the North Capasso property at locations considered hydraulically upgradient (July 2004 and April 2005 groundwater elevation contours presented on Figures 11 and 12 in the RI Report and October 2005 groundwater elevation contours as presented on Figure 3 in this report) or crossgradient (August 2004 groundwater elevation contours presented on Figure 11 in the RI Report) to deep wells GAGW-01 and GAGW-05 located on the western portion of the Quanta Resources property. Well GAGW-04D is a deep well located northeast of the Quanta Resources property, across Review Avenue, and at times may represent background groundwater conditions. Other wells installed along Review Avenue (MW-14D, MW-14S, and MW-16; see Figure 1) also represent background groundwater conditions.

² Public drinking and industrial water supplies for Queens County are supplied primarily by the New York Reservoir System. The area of Queens County that relies on groundwater as its source for potable water is located approximately 6 miles southeast of the Quanta Resources property. In addition, according to the 1990 LMS Report, only a small number of private wells are permitted by the New York City Department of Health for non-potable uses. The Inactive Hazardous Waste Disposal Report (NYSDEC, April 2003) for Roehr Chemicals, Inc. facility which is located approximately 900 feet north of the Quanta Resources property states that "Drinking water contamination is unlikely as groundwater is not used as a potable supply within a five mile radius" and for the Quanta Resources property it states "The aquifer of concern is not used as a source for drinking water. Groundwater wells in the area of Queens are used only for commercial and industrial purposes".

³ This classification may be given to those waters that, because of natural or man-made conditions, cannot meet the requirements for primary and secondary contact recreation and fish propagation. Considerations used to derive Class SD criteria include human fish consumption, H(FC); fish survival, A(A); wildlife protection, W; and aesthetic considerations, E.

One shallow, on-property monitoring well GAGW-06I is a double-cased well, screened within the LNAPL smear zone over an interval of 31 to 41 feet bgs (-12.1 to -21.1 feet MSL). This shallow well was installed to obtain groundwater quality data representative of groundwater in contact with the LNAPL smear zone. The LNAPL smear zone is estimated to extend to approximately 38 feet bgs based on visual impacts and soil TPH data. Shallow well GAGW-09S was installed approximately 200 feet southwest (downgradient with respect to groundwater flow direction) and is screened over an interval of 28 feet bgs to 38 feet bgs (-14.7 to -24.7 feet MSL) which is within approximately the same interval as well GAGW-06I.

Volatile Organic Compounds

Ten VOCs were detected in samples collected from GAGW-09S and two VOCs were detected in samples collected from GAGW-09D. No VOCs were detected at concentrations exceeding the TOGS 1.1.1 SD criteria⁴. The following VOCs were detected at concentrations greater than the TOGS 1.1.1 GA criteria:

- Benzene (TOGS 1.1.1 GA criteria = 1 ug/l); detected at a concentration of 7.8 ug/l at GAGW-09S;
- Chloroethane (TOGS 1.1.1 GA criteria = 5 ug/l); detected at a concentration of 20 ug/l at GAGW-09S;
- Methyl tertiary-butyl ether or MTBE (TOGS 1.1.1 GA criteria = 10 ug/l); detected at a concentration of 14 ug/l at GAGW-09S and at 250 ug/l at GAGW-09D; and,
- Trichloroethene or TCE (TOGS 1.1.1 GA criteria = 5 ug/l); detected concentration of 16 ug/l at GAGW-09D.

In summary, none of the VOCs detected in wells GAGW-09S or GAGW-09D exceed the designated surface water protection criteria for Newtown Creek. In addition, while a small number of VOCs exceed the TOGS 1.1.1 GA groundwater criteria, these screening criteria are based on the protection of drinking water and there is no current or predicted future potable use of groundwater downgradient from the Site. Furthermore, off-property sources have contributed to the VOCs detected in wells GAGW-09S and GAGW-09D as discussed below for MTBE and TCE.

MTBE was detected at concentrations that exceeded the TOGS 1.1.1 GA criteria in deep wells GAGW-01, GAGW-02, and GAGW-05, and the shallow well GAGW-06I on the Quanta Resources property. However, as discussed in the RI Report (Section 5.1), MTBE was also detected in the North Capasso property deep wells GAGW-07 and GAGW-08 (150 ug/l and 240 ug/l, respectively) that are upgradient and / or crossgradient of the Site and upgradient wells MW-14S (21 ug/l) and at well MW-16 (170 ug/l) located along Review Avenue at concentrations exceeding TOGS 1.1.1 GA groundwater criteria.

TCE was detected in the North Capasso property deep wells GAGW-07 and GAGW-08 (9.3 ug/l and 21 ug/l, respectively) and at well MW-14D (14 ug/l and 9 ug/l) located along Review Avenue at concentrations exceeding TOGS 1.1.1 GA groundwater criteria. TCE was also detected in Quanta Resources property well GAGW-05 at concentrations lower than in North Capasso well GAGW-08. According to the interpreted groundwater contours shown on RI Report Figures 11

⁴ Of the 11 VOCs detected in groundwater at wells GAGW-09S and GAGW-09D, five VOCs have published TOGS 1.1.1 Class SD surface water criteria; benzene (10 ug/l human fish consumption (H(FC)) and 670 ug/l aquatic acute (A(A))); toluene (6,000 ug/l (H(FC)) and 430 ug/l (ACA)); trichloroethene (40 ug/L (H(FC)), total xylene (170 ug/L (A(A)), and chlorobenzene (500 ug/l (H(FC)) and 50 ug/l (E).

and 12 and Supplemental RI Report Figure 3, Quanta Resources property wells GAGW-01 and GAGW-05 are at most times (e.g., July 2004 and April and October 2005) downgradient from the North Capasso wells GAGW-07 and GAGW-08 and Review Avenue wells MW-14S and MW-14D. Therefore, well GAGW-04D should not be considered solely representative of background conditions for the entire Site. That is, groundwater flows to the Site property from the vicinity of well GAGW-04D and from other areas proximal to wells GAGW-07 and GAGW-08. These upgradient wells can, at times, also be considered as background wells for the Site.

Semi-Volatile Organic Compounds

Semi-volatile organic compounds were either not detected (GAGW-09D) or were detected at concentrations less than the TOGS 1.1.1 GA and SD criteria (GAGW-09S).

Polychlorinated Biphenyls (PCBs)

No PCBs were detected above the reporting limit of 0.5 and 0.51 ug/l.

Metals

Seventeen metals were detected in GAGW-09S and 13 metals were detected in GAGW-09D. The following metals were identified at concentrations exceeding the TOGS 1.1.1 GA criteria:

- Antimony (TOGS 1.1.1 GA criteria = 3 ug/l); detected at 8.2 ug/l at GAGW-09S and 7.1 ug/l at GAGW-09D;
- Iron (TOGS 1.1.1 GA criteria = 300 ug/l); detected at 28,900 ug/l at GAGW-09S and 631 ug/l at GAGW-09D;
- Magnesium (TOGS 1.1.1 GA criteria = 35,000 ug/l); detected at 52,900 ug/l at GAGW-09D;
- Manganese (TOGS 1.1.1 GA criteria = 300 ug/l); detected at 1,020 ug/l at GAGW-09S and at 1,040 ug/l at GAGW-09D;
- Sodium (TOGS 1.1.1 GA criteria = 20,000 ug/l); detected at 43,400 ug/l at GAGW-09S and 172,000 ug/l at GAGW-09D; and,
- Thallium (TOGS 1.1.1 GA criteria = 0.5 ug/l); detected at 6.4 ug/l at GAGW-09D.

As discussed in the RI Report, exceedances of the TOGS 1.1.1 GA criteria for the metals iron, magnesium, and sodium appear to be uniformly distributed across the Quanta Resources property. In many cases, these same metals were detected in the background groundwater well (GAGW-04D) at concentrations approximately equal to or higher than the downgradient groundwater monitoring wells. These data indicate that exceedances for these three metals in Quanta Resources property wells are due to, or at least partially attributable to, local background conditions. This conclusion also applies to metals detected in GAGW-09S and GAGW-09D although iron was found at higher concentrations at GAGW-09S.

In addition, exceedances of TOGS 1.1.1 GA criteria for manganese and iron were noted in the southern and southwestern wells on the Quanta Resources property (GAGW-02, GAGW-05, and GAGW-06I) and off-property at wells GAGW-09S and GAGW-09D. The TOGS 1.1.1 GA criteria for manganese and iron is based on "E", aesthetics, when used as a potable water source, due to the discoloration and staining these metals can produce. Because groundwater at the Quanta Resources property will not be used for potable purposes, the TOGS 1.1.1 GA criteria for manganese and iron do not directly apply. Furthermore, as discussed below, reducing conditions were observed in groundwater. As a result, it is expected that the presence of iron and manganese

in groundwater is largely due to naturally occurring iron and manganese deposits in geologic sediments that become dissolved in groundwater as a result of the observed reducing conditions.

Antimony and thallium were not detected in any of the monitoring wells on the Quanta Resources property, on the North Capasso property, and in background groundwater during the RI. In addition, antimony and thallium were not detected in any of the LNAPL samples collected during the RI.

The detections of metals in groundwater were also screened against TOGS 1.1.1 Class SD surface water criteria. Five of the fifteen metals detected in groundwater have published TOGS 1.1.1 Class SD surface water criteria; arsenic (120 ug/L); copper (4.8 ug/L or 7.9 ug/L in New York Harbor); lead (204 ug/L); nickel (74 ug/L); and zinc (140 ug/L). One metal, copper, exceeded TOGS 1.1.1 Class SD surface water criteria in groundwater (for non-New York Harbor waters only), at background groundwater monitoring well GAGW-04D (12.5 ug/l), and off-property downgradient monitoring wells GAGW-09S (9.6 ug/l) and GAGW-09D (5.5 ug/l). No exceedances of the TOGS 1.1.1 Class SD surface water criteria for copper were observed in monitoring wells on the Quanta Resources property.

In summary, iron, manganese, magnesium, and sodium were detected at concentrations approximately equal to background levels and/or are likely to originate from natural deposits of these metals in subsurface materials. Copper, the only metal detected at concentrations in GAGW-09S and GAGW-09D above the TOGS 1.1.1 Class SD criteria (for non-New York harbor waters only) was detected at higher concentrations above the SD criteria in background groundwater.

Natural Attenuation Parameters (NAPs)

Six NAPs were analyzed for each groundwater sample. Three NAPs, nitrate, sulfate, and chloride, have TOGS 1.1.1 GA criteria. There were no exceedances of TOGS 1.1.1 GA groundwater criteria for either nitrate or sulfate. Chloride exceeded the TOGS 1.1.1 GA groundwater criteria at GAGW-09D. No TOGS 1.1.1 Class SD surface water criteria exist for the NAPs.

Based on the review of the natural attenuation parameter data presented, along with the field parameter data collected during groundwater sampling, presented in Table 5, there is evidence that natural attenuation of dissolved organic chemicals in groundwater is occurring and that the geochemical conditions in groundwater will support continued natural attenuation. Dissolved oxygen and oxidation-reduction potential have been sufficiently depressed in groundwater to support reductive (anaerobic) biological degradation of organic compounds. No dissolved oxygen was observed (DO = 0.0 mg/L) and the oxidation-reduction potential of groundwater is depressed to levels ranging from -89 mV to -165 mV, indicating reducing conditions.

4.0 Conceptual Site Model - Groundwater

Groundwater within the vicinity of the property is not currently used for potable purposes and likely will not be used in the future as a potable source. A potential pathway of concern associated with groundwater is the discharge of groundwater to Newtown Creek surface water. Unpermitted discharges that have occurred during the past century have substantially degraded the quality of Newtown Creek both upstream and downstream of the Site. As a result, Newtown Creek has been given a SD classification by NYSDEC, which is the lowest classification for saline surface water in New York State.

Groundwater within the glacial deposits overlying the lower (Raritan) clay was characterized during the RI (see Section 5.1 of the RI Report) and the Supplemental RI. This characterization generally focused on two portions of the saturated zone beneath the property and downgradient of the property: the portion of groundwater in contact with the LNAPL smear zone (smear zone groundwater) and the portion of groundwater beneath the LNAPL smear zone (deeper groundwater). While these two portions comprise the same hydrogeologic unit, they are distinguished with respect to their proximity to the LNAPL smear zone.

In addition to the sample analyses results collected during the RI and Supplemental RI, available groundwater sample analyses results obtained during previous hydrogeologic investigations were utilized, as appropriate, to augment the characterization of smear zone groundwater, as discussed in Section 5.1 of the RI Report. As many of these pre-remedial investigation groundwater samples were collected through an accumulated LNAPL layer in a monitoring well, these data are expected to represent worst-case or near worst-case groundwater conditions within the LNAPL smear zone.

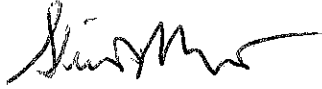
Solute transport modeling performed during the RI (see Section 5.1.3 of the RI Report) was performed to determine whether smear zone groundwater impacts could adversely impact surface water quality within Newtown Creek. This evaluation determined that chemicals in the smear zone groundwater on the Quanta Resources property that exceed the designated surface water quality criteria for Newtown Creek (TOGS 1.1.1 SD criteria) would attenuate to concentrations below the SD surface water criteria prior to discharge to Newtown Creek. Conservatively, maximum concentrations and no retardation (except for benzo(a)pyrene), were used in the evaluation. Therefore, even without considering other attenuation mechanisms, such as mixing of smear zone groundwater with the lower groundwater, attenuation within Newtown Creek sediments prior to discharge to the creek, or mixing directly with surface water in Newtown Creek, the chemical impacts identified within the smear zone groundwater on the Quanta Resources property do not threaten Newtown Creek. The data collected during the Supplemental RI from off-property well GAGW-09S, supports the conclusion that smear zone groundwater from the site does not threaten downgradient human receptors or exceed TOGS 1.1.1 SD criteria.

With respect to the deeper groundwater, only a small number of VOCs, SVOCs, and metals were detected at concentrations that exceed the TOGS 1.1.1 GA criteria (a drinking water protection criteria.) Many of these chemicals can be attributable to background and/or upgradient sources. In addition, no site-related VOCs or metals were detected during the RI and the Supplemental RI in the deeper groundwater at concentrations that exceed the TOGS 1.1.1 Class SD surface water criteria. All SVOCs detected during the RI were below TOGS 1.1.1 Class SD surface water criteria with the exception of benzo(a)pyrene which was present in one deeper groundwater well (GAGW-03). However, no SVOCs (including benzo(a)pyrene) were detected in the downgradient off-property well GAGW-09D which supports the solute transport modeling results.

In summary, the low solubility of chemicals detected in LNAPL and ongoing natural attenuation mechanisms occurring within groundwater, particularly within the groundwater/LNAPL smear zone interface, are effectively mitigating LNAPL chemical impacts to groundwater. Many of the chemicals detected can be attributable to background and/or upgradient sources (e.g., MTBE and TCE). Based on the contaminant fate and transport evaluations performed for the remedial investigation, groundwater at the property does not threaten the designated use of Newtown Creek. This conclusion has been supported by the results of the Supplemental RI.

Please do not hesitate to contact Pete Zimmermann, the Project Coordinator for QSAG, at (212) 581-8023 should any questions arise from your or your colleagues' review of this document.

GOLDER ASSOCIATES INC.



Stuart D. Mitchell, P.G.
Senior Consultant and Associate



Randolph S. White, P.E.
Project Director and Principal

SDM/RSW/lrl

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cc: V. Brevdo, NYSDEC
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D. Walsh, NYSDEC
Quanta Site Administrative Group
P. Zimmermann, ELM

**TABLE 1
MONITORING WELL CONSTRUCTION DATA
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK**

WELL ID	DATE OF INSTALLATION	GROUND SURFACE ELEVATION (FT- MSL)	ELEVATION TOP OF INNER CASING (FT-MSL)	WELL DIAMETER & MATERIAL	TYPE OF WELL	BOTTOM DEPTH OF OUTER PROTECTIVE STEEL CASING (FT-BGS)	WELL DEPTH (FT- BGS)	SCREEN LENGTH (FT)	ELEVATION TOP OF SCREENED INTERVAL (FT - MSL)	ELEVATION BOTTOM OF SCREENED INTERVAL (FT-MSL)
ON-PROPERTY MONITORING WELLS										
GAGW-01	#####	19.93	22.32	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	60	74	10	-44.1	-54.1
GAGW-02	#####	17.66	20.40	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	60.5	73.5	10	-45.8	-55.8
GAGW-03	#####	24.03	26.52	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	60.5	75	10	-41.0	-51.0
GAGW-05	#####	16.30	18.65	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	60	73	10	-46.7	-56.7
GAGW-06I	June 28, 2004	18.95	21.46	2-INCH SCH 40 PVC	Shallow LNAPL Smear Zone Groundwater Monitoring Well	30	41	10	-12.1	-22.1
GAL-01	October 21, 2003	20.34	23.11	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	22	10	8.3	-1.7
GAL-01R	July 13, 2004	20.40	23.05	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	28	17	9.4	-7.6
GAL-02	October 28, 2003	18.21	20.20	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	23	15	10.2	-4.8
GAL-03	October 14, 2003	24.04	26.16	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	15	9.0	-6.0
GAL-04	October 21, 2003	15.96	18.65	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	23	15	8.0	-7.0
GAL-05	October 13, 2003	23.82	26.66	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	35	20	8.8	-11.2
GAL-06	October 13, 2003	26.42	28.79	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	29	15	12.4	-2.6
GAL-07	October 30, 2003	19.13	21.51	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	24	15	10.1	-4.9
GAL-08	November 6, 2003	25.17	27.71	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	28	15	12.2	-2.8
GAL-09	March 3, 2004	26.01	28.52	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	15	11.0	-4.0
GAL-16	July 1, 2004	18.72	21.29	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	28	15	5.7	-9.3
GAL-19	February 24, 2005	22.87	25.20	2-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	35	20	7.9	-12.1
GAL-20	March 1, 2005	27.78	29.90	2-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	33	17	11.8	-5.2

**TABLE 1
MONITORING WELL CONSTRUCTION DATA
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK**

WELL ID	DATE OF INSTALLATION	GROUND SURFACE ELEVATION (FT- MSL)	ELEVATION TOP OF INNER CASING (FT-MSL)	WELL DIAMETER & MATERIAL	TYPE OF WELL	BOTTOM DEPTH OF OUTER PROTECTIVE STEEL CASING (FT-BGS)	WELL DEPTH (FT- BGS)	SCREEN LENGTH (FT)	ELEVATION TOP OF SCREENED INTERVAL (FT - MSL)	ELEVATION BOTTOM OF SCREENED INTERVAL (FT-MSL)
OFF-PROPERTY MONITORING WELLS										
GAGW-04D	August 2, 2004	25.69	25.54	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	40	69	10	-33.3	-43.3
GAGW-04	#####	25.85	25.53	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	29	15	11.9	-3.2
GAGW-07	June 21, 2004	22.36	22.10	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	55	73	10	-40.6	-50.6
GAGW-08	June 17, 2004	19.17	18.92	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	50	72	10	-42.8	-52.8
GAGW-09S	October 6, 2005	13.28	12.88	2-INCH SCH 40 PVC	Shallow Groundwater Monitoring Well	23	38	10	-14.7	-24.7
GAGW-09D	October 6, 2005	13.34	12.90	2-INCH SCH 40 PVC	Deep Groundwater Monitoring Well	23	69	10	-45.7	-55.7
GAL-10	June 15, 2004	23.73	23.24	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	15	8.7	-6.3
GAL-11	June 18, 2004	18.79	18.59	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	26	15	7.8	-7.2
GAL-12	June 24, 2004	17.31	16.62	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	20	7.3	-12.7
GAL-13	June 16, 2004	18.09	17.74	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	26	15	7.1	-7.9
GAL-14	June 27, 2004	16.27	15.85	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	20	6.3	-13.7
GAL-15	June 26, 2004	21.78	21.43	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	28	15	8.8	-6.2
GAL-17	June 26, 2004	16.31	15.82	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	27	15	4.3	-10.7
GAL-18	July 14, 2004	22.69	22.22	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	15	7.7	-7.3
GAL-21	March 30, 2005	17.83	17.46	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	25	15	7.8	-7.2
GAL-22	March 31, 2005	21.28	21.11	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	30	15	6.3	-8.7
GAL-23	April 1, 2005	17.95	17.55	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	25	15	8.0	-7.1
GAL-24	March 29, 2005	18.38	17.91	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	26	15	7.4	-7.6
GAL-25	April 3, 2005	16.39	15.76	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	27	20	9.4	-10.6
GAL-26	April 3, 2005	15.83	15.55	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	28	20	7.8	-12.2
GAL-27	February 25, 2005	12.99	12.48	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	20	15	8.0	-7.0
GAL-28	February 28, 2005	12.54	12.40	4-INCH SCH 40 PVC	LNAPL Monitoring Well	NA	20	15	7.5	-7.5

NOTES:

(1) - Monitoring wells surveyed by GEOD Corporation in August 2004 and April 2005 and October 2005.

FT.-BGS: Feet Below Ground Surface

FT.-MSL: Feet Mean Sea Level

NA - Not Applicable

**TABLE 2
SAMPLING & ANALYSIS SUMMARY
GROUNDWATER
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK**

Sample ID	Date Sampled	TCL VOCs	TCL SVOCs	TCL PCBs	TAL Metals	NAPs
GAGW-09S	10/17/2005	x	x	x	x	x
GAGW-09D	10/17/2005	x	x	x	x	x
QA/QC						
Field Duplicate						
FGAGW-09S	10/17/2005	x	x	x	x	x
Trip Blank						
TB01	10/17/2005	x				
Rinsate Blank						
RB01	10/17/2005	x	x	x	x	x

Notes:

TCL VOCs (SW846 8260B), TCL SVOCs (SW846 8270C), PCBs (SW846 8082), TAL Metals (SW846 6010B), Mercury (SW846 7470A), Total Cyanide (EPA 335.3).

Natural Attenuation Parameters: Alkalinity (EPA 310.1), Chloride (SM4500 CLB), Nitrate (EPA 353.2), Sulfate (EPA 375.4), Dissolved Organic Carbon (EPA 415.1), Total Organic Carbon (EPA 415.1),

and Total Dissolved Solids (EPA 160.1). Due to a laboratory oversight, sample bottles were not provided for NAPs methane, ethane, ethene, carbon dioxide, and dissolved organic carbon and thus these samples were not collected. These analyses are not critical to the overall conclusion reached in the Supplemental RI.

TCL = Target Compound List as defined in Contract Laboratory Program Statement of Work OLM04.2

TAL = Target Analyte List as defined in Contract Laboratory Program Statement of Work ILM 04.0.

**TABLE 3
GROUNDWATER LEVEL MEASUREMENT DATA
JULY AND AUGUST 2004 AND APRIL AND OCTOBER 2005
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK**

Monitoring Point ID	Date	Reference Elevation (FT. - MSL)	Depth to Groundwater (FT. BTIC)	Groundwater Elevation (FT. - MSL)
On-Property Wells				
GAGW-01	7/24/2004	22.33	18.85	3.48
	8/31/2004		18.81	3.52
	4/19/2005		18.36	3.97
	10/17/2005		18.80	3.53
GAGW-02	7/24/2004	20.40	17.13	3.27
	8/31/2004		17.03	3.37
	4/19/2005		16.62	3.78
	10/17/2005		17.05	3.35
GAGW-03	7/24/2004	26.52	23.04	3.48
	8/31/2004		22.94	3.58
	4/19/2005		22.55	3.97
	10/17/2005		22.96	3.56
GAGW-05	7/24/2004	18.65	15.29	3.36
	8/31/2004		15.32	3.33
	4/19/2005		14.88	3.77
	10/17/2005		15.31	3.34
GAGW-06I	7/24/2004	21.46	18.20	3.26
	8/31/2004		18.09	3.37
	4/19/2005		17.69	3.77
	10/17/2005		18.12	3.34
Off-Property Wells				
GAGW-04D ¹	8/31/2004	25.54	21.60	3.94
	4/19/2005		21.13	4.41
	10/17/2005		21.74	3.80
GAGW-07	7/24/2004	22.10	18.35	3.75
	8/31/2004		18.35	3.75
	4/19/2005		17.86	4.24
	10/17/2005		18.32	3.78
GAGW-08	7/24/2004	18.92	15.24	3.68
	8/31/2004		15.26	3.66
	4/19/2005		14.78	4.14
	10/17/2005		15.19	3.73
GAGW-09S ¹	10/17/05	12.88	10.96	1.92
GAGW-09D ¹	10/17/05	12.90	10.79	2.11
GAL-27	4/4/2005	12.48	5.05	7.43
	4/19/2005		6.00	6.48
	10/17/2005		4.31	8.17
GAL-28	4/4/2005	12.40	6.46	5.94
	4/19/2005		6.49	5.91
	10/17/2005		5.95	6.45
MW-7R	4/19/2005	9.82	9.16	0.66
	10/17/2005		7.72	2.10

Notes:

(1) - Monitoring well GAGW-04D was installed August 2, 2004 and monitoring wells GAGW-09S and GAGW-09D were installed in October 2005.

FT. BTIC - Feet below top of inner well casing

MSL = Mean Sea Level

TABLE 4
DATA VALIDATION QUALIFIER DEFINITIONS
SUPPLEMENTAL REMEDIAL INVESTIGATION
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Organics

<u>Qualifier</u>	<u>Definition</u>
U	- The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	- The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	- The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	- The sample results are unusable and the analyte may or may not be present in the sample.

Inorganics

<u>Qualifier</u>	<u>Definition</u>
U	- The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	- The result is an estimated quantity. The numerical value is the approximate concentration of the analyte in the sample.
UJ	- The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	- The data are unusable. Sample results were rejected due to serious deficiencies in meeting QC criteria. The sample may or may not be present in the sample.

TABLE 4A
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
VOLATILE ORGANIC COMPOUNDS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:			GAGW-09S 10/17/2005 677998			FGAGW-09S 10/17/2005 677997			GAGW-09D 10/17/2005 677996			GAGW-01 1/9/2004 493423			GAGW-02 1/9/2004 493426			FGAGW-02 1/9/2004 493428			GAGW-03 1/9/2004 493424		
Parameter	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone		50	8.2		5	7.4		5	-	U	10	-	R	5	-	R	5	-	R	5	-	R	5
Benzene	10	1	7.8		1	7.6		5	-	U	2	-	U	1	-	U	1	-	U	1	-	U	1
Carbon Tetrachloride		5	-	U	2	-	U	2	-	U	4	-	U	2	-	U	2	-	U	2	0.6	JN	2
Chlorobenzene	50	5	1.1	J	5	1.2	J	2	-	U	10	-	U	5	-	U	5	-	U	5	-	U	5
Chloroethane		5	20		5	18		5	-	U	10	-	U	5	-	U	5	-	U	5	-	U	5
Chloroform		7	-	U	5	-	U	5	-	U	10	-	U	5	-	U	5	-	U	5	7.9		5
Cyclohexane			52		5	52		5	-	U	10	-	U	5	2.4		5	2.6	J	5	-	U	5
1,1-Dichloroethane		5	-	U	2	-	U	2	-	U	4	1	JN	5	-	U	5	-	U	5	-	U	5
cis-1,2-Dichloroethene		5	-	U	5	-	U	5	-	U	10	0.7	JN	5	-	U	5	-	U	5	-	U	5
Isopropylbenzene		5	3.1	J	5	3.2	J	5	-	U	10	-	U	5	-	U	5	-	U	5	-	U	5
Methyl Cyclohexane			68		5	68		5	-	U	10	-	U	5	9.6	J	5	9.9	J	5	-	U	5
MTBE		10	14		5	14		5	250		10	170		5	40		5	38		5	1.4	JN	5
Toluene	430	5	1.4	J	5	1.4	J	5	-	U	10	-	U	5	-	U	5	-	U	5	-	U	5
Trichloroethene	40	5	-	U	1	-	U	1	16		2	4.5		1	-	U	1	-	U	1	-	U	1
Vinyl Chloride		2	-	U	5	-	U	5	-	U	10	-	U	5	-	U	5	-	U	5	-	U	5
Xylene (Total)	170	5	3.8	J	5	3.6	J	5	-	U	10	-	U	5	-	U	5	1.7	JN	5	-	U	5
Total VOCs			179.4			176.4			266			176.2			52			52.2			9.9		

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1. (June 1998 and April 2000 Addendum (MTBE))

█ indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

█ indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4A
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
VOLATILE ORGANIC COMPOUNDS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:			GAGW-04D 8/12/2004 554735			GAGW-05 1/9/2004 493425			GAGW-06I 8/12/2004 554731			FGAGW-06I 8/12/2004 554732			GAGW-07 8/12/2004 554734			GAGW-08 8/12/2004 554733		
Parameter	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acetone		50	-	R	5	-	R	5	34	J	5	29	J	5	-	R	5	-	R	5
Benzene	10	1	-	U	1	-	U	2	1		1	1.1		1	-	U	2	-	U	2
Carbon Tetrachloride		5	-	U	2	-	U	4	-	UJ	2	-	UJ	2	-	U	4	-	U	4
Chlorobenzene	50	5	-	U	5	-	U	10	-	U	5	-	U	5	-	U	10	-	U	10
Chloroethane		5	-	U	5	-	U	10	4.9	J	5	4.2	J	5	-	U	10	-	U	10
Chloroform		7	6.8		5	-	U	10	2.4	J	5	2.7	J	5	1.7	J	10	-	U	10
Cyclohexane			-	U	5	-	U	10	15		5	16		5	-	U	10	-	U	10
1,1-Dichloroethane		5	-	U	5	-	U	10	1.6	J	5	1.5	J	5	-	U	10	-	U	10
cis-1,2-Dichloroethene		5	-	U	5	-	U	10	5		5	5.1		5	-	U	10	1	J	10
Isopropylbenzene		5	-	U	5	-	U	10	1.2	J	5	1.2	J	5	-	U	10	-	U	10
Methyl Cyclohexane			-	U	5	-	U	10	28		5	30		5	-	U	10	-	U	10
MTBE		10	1	J	5	270		10	33		5	32		5	150		10	240		10
Toluene	430	5	0.9	J	5	-	U	10	-	U	5	-	U	5	-	U	10	-	U	10
Trichloroethene	40	5	-	U	1	17		2	-	U	1	-	U	1	9.3		2	21		2
Vinyl Chloride		2	-	U	5	-	U	10	2.1	J	5	2.1	J	5	-	U	10	-	U	10
Xylene (Total)	170	5	-	U	5	-	U	10	-	U	5	-	U	5	-	U	10	-	U	10
Total VOCs			8.7			287			128.2			124.9			161			262		

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1. (June 1998 and April 2000 Addendum (MTBE))

█ indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

█ indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4B
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
SEMI-VOLATILE ORGANIC COMPOUNDS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Parameter	Sample Point: Date Sampled: Lab ID:		GAGW-09S 10/17/2005 677998			FGAGW-09S 10/17/2005 677997			GAGW-09D 10/17/2005 677996			GAGW-01 1/9/2004 493423			GAGW-02 1/9/2004 493426			FGAGW-02 1/9/2004 493428			GAGW-03 1/9/2004 493424		
	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acenaphthene	60	20	3	J	10	3.3	J	10	-	U	10	-	U	11	0.7	J	12	0.6	J	11	-	U	10
Anthracene		50	0.9	J	10	0.9	J	10	-	U	10	-	U	11	0.6	J	12	0.6	J	11	-	U	10
Benzo(a)pyrene	0.0006	0.0	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1.2	-	U	1.1	0.3	J	1
Benzo(b)fluoranthene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1.2	-	U	1.1	0.3	J	1
Benzo(g,h,i)perylene			-	U	10	-	U	10	-	U	10	-	U	11	-	U	12	-	U	11	0.6	J	10
Benzo(k)fluoranthene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1.2	-	U	1.1	0.4	J	1
bis(2-Ethylhexyl)phthalate		5	-	U	10	-	U	10	-	U	10	-	U	11	-	U	12	-	U	11	3.2	J	10
Carbazole			0.4	J	10	0.4	J	10	-	U	10	-	U	11	-	U	12	-	U	11	-	U	10
Chrysene		0.002	-	U	10	-	U	10	-	U	10	0.3	J	11	-	U	12	-	U	11	-	U	10
Dibenzofuran			0.5	J	10	0.6	J	10	-	U	10	-	U	11	-	U	12	-	U	11	-	U	10
Diethylphthalate		50	2.4	J	10	2.3	J	10	-	U	10	-	U	11	-	U	12	-	U	11	-	U	10
Di-n-butylphthalate		50	-	U	10	-	U	10	-	U	10	3	J	11	3.2	J	12	3	J	11	-	U	10
Dibenz(a,h)anthracene			-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1.2	-	U	1.1	0.5	J	1
Fluoranthene		50	-	U	10	-	U	10	-	U	10	0.3	J	11	0.3	J	12	0.3	J	11	-	U	10
Fluorene	23	50	2.3	J	10	2.5	J	10	-	U	1	-	U	1.1	0.7	J	12	0.6	J	11	-	U	1
Indeno(1,2,3-cd)pyrene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1.2	-	U	1.1	0.3	J	1
2-Methylnaphthalene	38		2	J	10	1.9	J	10	-	U	1	-	U	1.1	0.9	J	12	0.8	J	11	-	U	1
Naphthalene	140	10	1.2	J	10	0.9	J	10	-	U	10	-	U	11	-	U	12	-	U	11	-	U	10
Pentachlorophenol		2 *	-	U	10	-	U	10	-	U	10	-	U	11	-	U	12	-	U	11	-	U	10
Phenanthrene	14	50	2.1	J	10	2.4	J	10	-	U	10	0.3	J	11	1.6	J	12	1.5	J	11	-	U	10
Pyrene		50	-	U	10	1.1	J	10	-	U	10	0.8	J	11	0.8	J	12	0.8	J	11	-	U	10
Total SVOCs			14.8			16.3			0			4.7			8.8			8.2			5.6		

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U " or "UU".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

	indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection
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	indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection
--	--

	indicates that detected value is greater than the NYS AWQS&GV - GA and SD Criteria
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* Total phenolic compounds = 2 maximum allowable concentration

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4B
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
SEMI-VOLATILE ORGANIC COMPOUNDS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Parameter	Sample Point:		GAGW-04D			GAGW-05			GAGW-06I			FGAGW-06I			GAGW-07			GAGW-08		
	Date Sampled:		8/12/2004			1/9/2004			8/12/2004			8/12/2004			8/12/2004			8/12/2004		
	Lab ID:		554735			493425			554731			554732			554734			554733		
	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Acenaphthene	60	20	-	U	10	-	U	10	1	J	10	1.4	J	11	-	U	10	-	U	10
Anthracene		50	-	U	10	-	U	10	0.6	J	10	0.8	J	11	-	U	10	-	U	10
Benzo(a)pyrene	0.0006	0.0	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1	-	U	1
Benzo(b)fluoranthene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1	-	U	1
Benzo(g,h,i)perylene			-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Benzo(k)fluoranthene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1	-	U	1
bis(2-Ethylhexyl)phthalate		5	-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Carbazole			-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Chrysene		0.002	-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Dibenzofuran			-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Diethylphthalate		50	-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Di-n-butylphthalate		50	-	U	10	2.2	J	10	-	U	10	-	U	11	-	U	10	-	U	10
Dibenz(a,h)anthracene			-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1	-	U	1
Fluoranthene		50	-	U	10	-	U	10	-	U	10	-	U	11	-	U	10	-	U	10
Fluorene	23	50	-	U	1	-	U	1	0.9	J	10	1.1	J	11	-	U	1	-	U	1
Indeno(1,2,3-cd)pyrene		0.002	-	U	1	-	U	1	-	U	1	-	U	1.1	-	U	1	-	U	1
2-Methylnaphthalene	38		-	U	1	-	U	1	0.2	J	10	-	U	1.1	-	U	1	-	U	1
Naphthalene	140	10	-	U	10	-	U	10	-	U	10	0.4	J	11	-	U	10	-	U	10
Pentachlorophenol		2 *	-	U	10	-	U	10	-	U	10	0.2	J	42	-	U	10	-	U	10
Phenanthrene	14	50	-	U	10	0.3	J	10	1.9	J	10	2.2	J	11	-	U	10	-	U	10
Pyrene		50	-	U	10	-	U	10	0.4	J	10	0.4	J	11	-	U	10	-	U	10
Total SVOCs			0			2.5			5			6.5			0			0		


Notes:


All units are µg / L.


"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

 indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

 indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

 indicates that detected value is greater than the NYS AWQS&GV - GA and SD Criteria

* Total phenolic compounds = 2 maximum allowable concentration

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4C
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
PCBs
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:		GAGW-09S 10/17/2005 677998			FGAGW-09S 10/17/2005 677997			GAGW-09D 10/17/2005 677996			GAGW-01 1/9/2004 493423			GAGW-02 1/9/2004 493426			FGAGW-02 1/9/2004 493428		
Parameter	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Aroclor-1016		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1221		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1232		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1242		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1248		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1254		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52
Aroclor-1260		-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.56	-	U	0.52	-	U	0.52

There were no detections of PCBs

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

TABLE 4C
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
PCBs
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point:		GAGW-03			GAGW-04D			GAGW-05			GAGW-06I			FGAGW-06I			GAGW-07			GAGW-08		
Date Sampled:		1/9/2004			8/12/2004			1/9/2004			8/12/2004			8/12/2004			8/12/2004			8/12/2004		
Lab ID:		493424			554735			493425			554731			554732			554734			554733		
Parameter	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
	Aroclor-1016		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U
Aroclor-1221		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5
Aroclor-1232		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5
Aroclor-1242		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5
Aroclor-1248		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5
Aroclor-1254		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5
Aroclor-1260		-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.5	-	U	0.51	-	U	0.5	-	U	0.5

There were no detections of PCBs

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U " or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS Ambient Water Guidance Value - TOGS 1.1.1.

TABLE 4D
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
INORGANICS - METALS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:			GAGW-09S 10/17/2005 677998			FGAGW-09S 10/17/2005 677997			GAGW-09D 10/17/2005 677996			GAGW-01 1/9/2004 493423			GAGW-02 1/9/2004 493426			FGAGW-02 1/9/2004 493428		
Parameter	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Aluminum			3,390	J	62.6	1,710	J	62.6	92.7	B	62.6	103	B	62.6	140	B	62.6	135	B	62.6
Antimony		3	8.2	B	5.8	9.5	B	5.8	7.1	B	5.8	-	U	5.8	-	U	5.8	-	U	5.8
Arsenic	120	25	16.6		3.2	17		3.2	-	U	3.2	7.4		3.2	-	U	3.2	-	U	3.2
Barium		1000	164	B	1.7	152	B	1.7	92.1	B	1.7	59.6	B	1.7	141	B	1.7	142	B	1.7
Calcium			67100		42.5	65700		42.5	159000		42.5	19800		42.5	147000		42.5	146000		42.5
Chromium		50	6.2	B	1.6	2.1	B	1.6	-	U	1.6	-	U	1.6	-	U	1.6	-	U	1.6
Cobalt			4.4	B	1.7	2.8	B	1.7	-	U	1.7	-	U	1.7	-	U	1.7	-	U	1.7
Copper	4.8	200	9.6	B	3.7	6.6	B	3.7	5.5	B	3.7	-	U	3.7	-	U	3.7	-	U	3.7
Iron		300	28900		39.2	24900		39.2	631		39.2	4590		39.2	464		39.2	421		39.2
Lead	204	25	4.9		2.7	3.7		2.7	-	U	2.7	-	U	2.3	3.4		2.3	-	U	2.3
Magnesium		35000	24,900		41.6	23,900		41.6	52900		41.6	66600		41.6	46300		41.6	46000		41.6
Manganese		300	1020		1.2	977		1.2	1040		1.2	277		1.2	753		1.2	749		1.2
Nickel	74	100	9.8	B	2.4	6.2	B	2.4	4.4	B	2.4	2.5	B	1.6	4.6	B	1.6	3.5	B	1.6
Potassium			19700	J	315	18800	J	315	4980	J	315	4850	B	315	2970	B	315	2990	B	315
Sodium		20000	43400		396	43200		396	172000		396	205000		396	121000		396	122000		396
Thallium		0.5	-	U	4.7	-	U	4.7	6.4	B	4.7	-	U	4.7	-	U	4.7	-	U	4.7
Vanadium		14	9.8	B	4.7	-	U	4.7	-	U	4.7	-	U	1.8	-	U	1.8	3.5	B	1.8
Zinc	95	2000	26	B	5.8	21.3	B	5.8	7.9	B	5.8	7.3	B	5.8	10.1	B	5.8	9.8	B	5.8

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U " by the analytical laboratory STL-Edison.

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

█ indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

█ indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4D
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
INORGANICS - METALS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:			GAGW-03 1/9/2004 493424			GAGW-04D 8/12/2004 554735			GAGW-05 1/9/2004 493425			GAGW-06I 8/12/2004 554731			FGAGW-06I 8/12/2004 554732			GAGW-07 8/12/2004 554734		
Parameter	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Aluminum			123	B	62.6	2140		62.6	79.3	B	62.6	-	U	0.5	-	U	0.51	722		62.6
Antimony		3	-	U	5.8	-	U	5.8	-	U	5.8	-	U	5.8	-	U	5.8	-	U	5.8
Arsenic	120	25	-	U	3.2	-	U	3.2	-	U	3.2	-	U	3.2	-	U	3.2	-	U	3.2
Barium		1000	72.4	B	1.7	146	B	1.7	80.1	B	1.7	165	B	1.7	153	B	1.7	127	B	1.7
Calcium			80400		42.5	144000	B	42.5	189000		42.5	56200		42.5	50200		42.5	148000		42.5
Chromium		50	-	U	1.6	7.1	B	1.6	-	U	1.6	-	U	1.6	-	U	1.6	3.8	B	1.6
Cobalt			-	U	1.7	-	U	1.7	-	U	1.7	-	U	1.7	-	U	1.7	-	U	1.7
Copper	4.8	200	3.7	B	3.7	12.5	B	3.7	-	U	3.7	-	U	3.7	-	U	3.7	-	U	3.7
Iron		300	266		39.2	4370		39.2	4600		39.2	19200		39.2	16300		39.2	1700		39.2
Lead	204	25	-	U	2.3	5.5		2.6	-	U	2.3	-	U	2.6	-	U	2.6	3.8		2.6
Magnesium		35000	25500		41.6	55300		41.6	61400		41.6	17700		41.6	15900		41.6	48000		41.6
Manganese		300	104		1.2	235		1.2	807		1.2	1110		1.2	1010		1.2	106		1.2
Nickel	74	100	2.2	B	1.6	8.7	B	2.4	3.2	B	1.6	3	B	2.4	3.4	B	2.4	5.8	B	2.4
Potassium			3150	B	315	4040	B	315	3440	B	315	7090		315	7400		315	3850	B	315
Sodium		20000	92800		396	200000		396	170000		396	74300		396	81900		396	145000		396
Thallium		0.5	-	U	4.7	-	U	4.7	-	U	4.7	-	U	4.7	-	U	4.7	-	U	4.7
Vanadium		14	-	U	1.8	2.3	B	2	-	U	1.8	-	U	2	-	U	2	-	U	2
Zinc	95	2000	10.2	B	5.8	27	B	5.8	6.7	B	5.8	9.4	B	5.8	10.3	B	5.8	17.6	B	5.8

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

█ indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

█ indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4D
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
INORGANICS - METALS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:			GAGW-08 8/12/2004 554733		
Parameter	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL
Aluminum			-	U	0.5
Antimony		3	-	U	5.8
Arsenic	120	25	-	U	3.2
Barium		1000	43.6	B	1.7
Calcium			196000		42.5
Chromium		50	-	U	1.6
Cobalt			-	U	1.7
Copper	4.8	200	-	U	3.7
Iron		300	73.9	B	39.2
Lead	204	25	-	U	2.6
Magnesium		35000	63100		41.6
Manganese		300	207		1.2
Nickel	74	100	3.8	B	2.4
Potassium			4110	B	315
Sodium		20000	213000		396
Thallium		0.5	-	U	4.7
Vanadium		14	-	U	2
Zinc	95	2000	7.3	B	5.8

Notes:

All units are µg / L.

"-" indicates that the constituent was not detected as qualified by "U" or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

TABLE 4E
SUMMARY OF CHEMICAL DETECTIONS
GROUNDWATER SAMPLE ANALYSES
NATURAL ATTENUATION PARAMETERS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK


Sample Point: Date Sampled: Lab ID:				GAGW-09S 10/17/2005 677998			FGAGW-09S 10/17/2005 677997			GAGW-09D 10/17/2005 677996			GAGW-01 1/9/2004 493423			GAGW-02 1/9/2004 493426			FGAGW-02 1/9/2004 493428		
Parameter	Units	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Alkalinity	mg/L			377		5	370		5	368		5	381		5	401		5	391		5
Carbon Dioxide	mg/L			NS			NS			NS			63		5	54.1		5	39.1		5
Chloride	mg/L		250	35.7		5	33.8		5	358		5	500	J	5	262	J	5	263	J	5
Dissolved Organic Carbon	mg/L			NS			NS			NS			-	R	1	-	R	1	-	R	1
Ethane	ng/L			NS			NS			NS			130		5	350		5	360		5
Ethene	ng/L			NS			NS			NS			170		5	58		5	63		5
Methane	µg/L			NS			NS			NS			8.5		0.015	590		0.015	640		0.015
Nitrate	mg/L		10	-		0.1	-	U	0.1	5.1		0.1	1.5		0.1	4.2		0.1	4.1		0.1
Sulfate	mg/L		250	-		5	-	U	5	128		5	186		5	83		5	82.7		5
Total Dissolved Solids	mg/L			383		10	426		10	750		10	1540		10	1030		10	1020		10
Total Organic Carbon	mg/L			13.4		1	13.2		1	1.3		1	-	R	1	-	R	1	-	R	1

Notes:

"-" indicates that the constituent was not detected as qualified by "U " or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

 indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

 indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

NS - Not Sampled

TABLE 4E
 SUMMARY OF CHEMICAL DETECTIONS
 GROUNDWATER SAMPLE ANALYSES
 NATURAL ATTENUATION PARAMETERS
 QUANTA RESOURCES SITE
 37-80 REVIEW AVENUE
 LONG ISLAND CITY, NEW YORK

Sample Point: Date Sampled: Lab ID:				GAGW-03 1/9/2004 493424			GAGW-04D 8/12/2004 554735			GAGW-05 1/9/2004 493425			GAGW-06I 8/12/2004 554731			FGAGW-06I 8/12/2004 554732			GAGW-07 8/12/2004 554734			GAGW-08 8/12/2004 554733		
Parameter	Units	TOGS 1.1.1 SD Criteria	TOGS 1.1.1 GA Criteria	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Alkalinity	mg/L			258		5	306		5	350		5	326		5	321		5	326		5	372		5
Carbon Dioxide	mg/L			10		5	42.3	J	5	40		5	92	J	5	86.5	J	5	35.8	J	5	52.6	J	5
Chloride	mg/L		250	100	J	5	402		5	431	J	5	34.6		5	34.3		5	277		5	452		5
Dissolved Organic Carbon	mg/L			-	R	1	2.2		1	-	R	1	6.1		1	5.8		1	-	U	1	1.4		1
Ethane	ng/L			410		5	360		5	96		5	390		5	510		5	160		5	140		5
Ethene	ng/L			380		5	280		5	88		5	210		5	280		5	140		5	66		5
Methane	µg/L			1.8		0.015	2.3		0.015	1.6		0.015	5000		0.015	4800		0.015	3.1		0.015	4.2		0.015
Nitrate	mg/L		10	7.9		0.1	6.7		0.1	2.9		0.1	-	U	0.1	-	U	0.1	6		0.1	4.4		0.1
Sulfate	mg/L		250	101		5	126		5	145		5	53.5		5	58.3		5	126		5	167		5
Total Dissolved Solids	mg/L			619		10	1070		10	1290		10	574		10	544		10	1304		10	1890		10
Total Organic Carbon	mg/L			-	R	1	2.3		1	-	R	1	6.0		1	6.3		1	1.2		1	1.5		1

Notes:

"-" indicates that the constituent was not detected as qualified by "U " or "UJ".

See "Notes and Qualifiers for Analytical Results" for qualifier definitions.

NYS AWQS&GV - New York State Ambient Water Quality Standards and Guidance Values - TOGS 1.1.1.

 indicates that detected value is greater than the NYS AWQS&GV - GA Criteria for drinking water protection

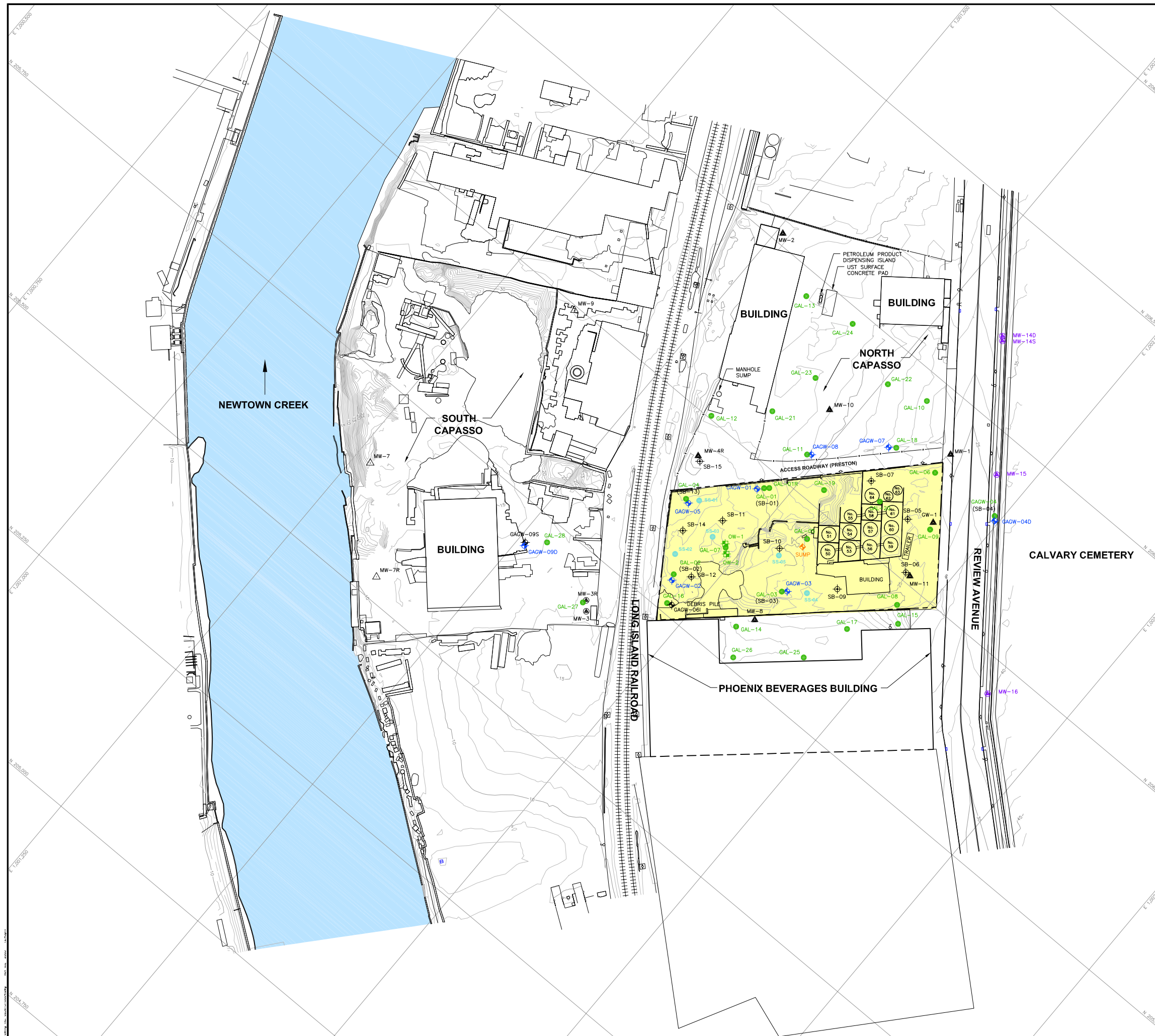
 indicates that detected value is greater than the NYS AWQS&GV - SD Criteria for Surface Water Protection

Sample point identification number preceded by "F" is a field duplicate.

NS - Not Sampled

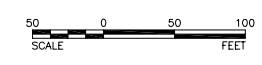
TABLE 5
SUMMARY OF GROUNDWATER FIELD PARAMETERS
QUANTA RESOURCES SITE
37-80 REVIEW AVENUE
LONG ISLAND CITY, NEW YORK

Monitoring Well ID	Temperature (°C)	pH (std)	Specific Conductance (mS/cm)	Turbidity (nTu)	Dissolved Oxygen (mg/l)	Redox Potential (mV)	Date Sampled
GAGW-01	13.6	7.2	2.77	<10	0	-126	1/9/2004
GAGW-02	13.0	6.9	1.75	20.0	0	-20	1/9/2004
GAGW-03	14.2	7.2	1.08	35.0	0	-18	1/9/2004
GAGW-04D	17.2	7.1	2.09	20.0	0.9	83	8/12/2004
GAGW-05	13.4	7.1	2.34	<10	0.0	-112	1/9/2004
GAGW-06I	16.5	6.8	0.64	32.0	0.3	-107	8/12/2004
GAGW-07	17.1	7.1	1.80	40.0	0.6	90	8/12/2004
GAGW-08	17.0	7.0	2.36	36.0	0.8	88	8/12/2004
GAGW-09S	17.7	7.5	0.84	31.9	0.0	-165	10/17/2005
GAGW-09D	16.5	7.3	2.10	27.0	0.0	-89	10/17/2005



- LEGEND**
- SURFICIAL SOIL SAMPLE LOCATIONS
 - LNAPL MONITORING WELL (GOLDER ASSOCIATES 2003/2004/2005) (SEE REFERENCE 2)
 - ⊕ SHALLOW GROUNDWATER MONITORING WELL (GOLDER ASSOCIATES 2004 AND 2005) (SEE REFERENCE 2)
 - ⊕ DEEP GROUNDWATER MONITORING WELL (GOLDER ASSOCIATES 2003/2004/2005) (SEE REFERENCE 2)
 - ⊕ SOIL BORING (GOLDER ASSOCIATES 2003/2004) (SEE REFERENCE 2)
 - ⊕ ROEHR CHEMICAL INVESTIGATION WELL LOCATION (NOVEMBER 2000) (SEE REFERENCE 2)
 - ▲ EXISTING ON-SITE AND OFF-SITE MONITORING WELL LOCATION (SEE REFERENCE 2)
 - ▲ EXISTING OFF-SITE MONITORING WELL LOCATION (LOCATION APPROXIMATE)
 - ◆ SUMP (SEE REFERENCE 2)
 - ⊕ LNAPL PILOT TEST STUDY OBSERVATION WELL (GOLDER ASSOCIATES 2004) (SEE REFERENCE 2)
 - ▲ EXISTING OFF-PROPERTY MONITORING WELL LOCATIONS (SEE REFERENCES 5 AND 6)
 - ⊕ EXISTING ABOVE GROUND TANK (REPORTED TO BE EMPTY AND DECONTAMINATED)
 - QUANTA PROPERTY BOUNDARY (SEE REFERENCE 3)
 - ||||| RAILROAD
 - FENCE LINE
 - 20 5 FOOT CONTOUR LINE (FT.-MSL)
 - 1 FOOT CONTOUR LINE (FT.-MSL)

- REFERENCES**
- 1.) BASE MAP TAKEN FROM DIGITAL FILE 2148.dwg, ENTITLED TOPOGRAPHIC SURVEY OF QUANTA RESOURCES SUPERFUND SITE, LONG ISLAND CITY, NY, PROVIDED BY GEOD CORPORATION, DATED JANUARY 11, 2004.
 - 2.) WELL COORDINATES TAKEN FROM A MICROSOFT EXCEL FILES Quanta Samples and Wells.xls, 2148A 8-23-04.xls, 2148A 4-11-05.xls, AND 2340 MONITORING WELLS.XLS, PROVIDED BY GEOD CORP.
 - 3.) PROPERTY BOUNDARY TAKEN FROM DIGITAL FILE 2148 Boundary.dwg, TITLED "MAP SHOWING BOUNDARY OF BLOCK 312 LOT 69", DATED APRIL 29, 2004, PROVIDED BY GEOD CORP.
 - 4.) DEBRIS PILE BOUNDARY REVISED PER FIELD OBSERVATIONS MADE BY GOLDER ASSOCIATES PERSONNEL DURING SITE VISITS.
 - 5.) LOCATION OF MW-9 DIGITIZED FROM HARDCOPY FIGURE TITLED "GROUNDWATER CONTOURS", PROVIDED BY HALEY & ALDRICH, DATED FEBRUARY 2004.
 - 6.) LOCATION OF MW-7 DIGITIZED FROM HARDCOPY FIGURE TITLED "SITE PLAN WITH SITE INVESTIGATION BORING LOCATIONS", PROVIDED BY ENVIRON, DATED SEPTEMBER 2000.



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW

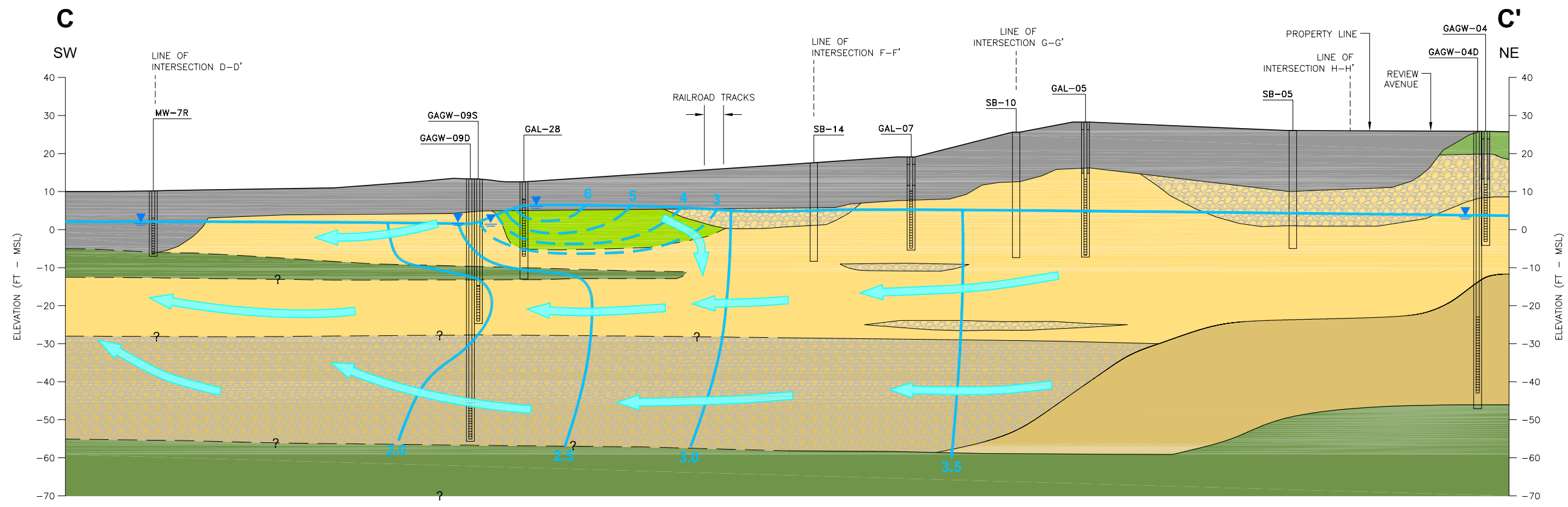
PROJECT: QUANTA RESOURCES SITE
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
QUEENS COUNTY, NEW YORK

TITLE: **REMEDIAL INVESTIGATION
MONITORING POINTS AND VICINITY PLAN**

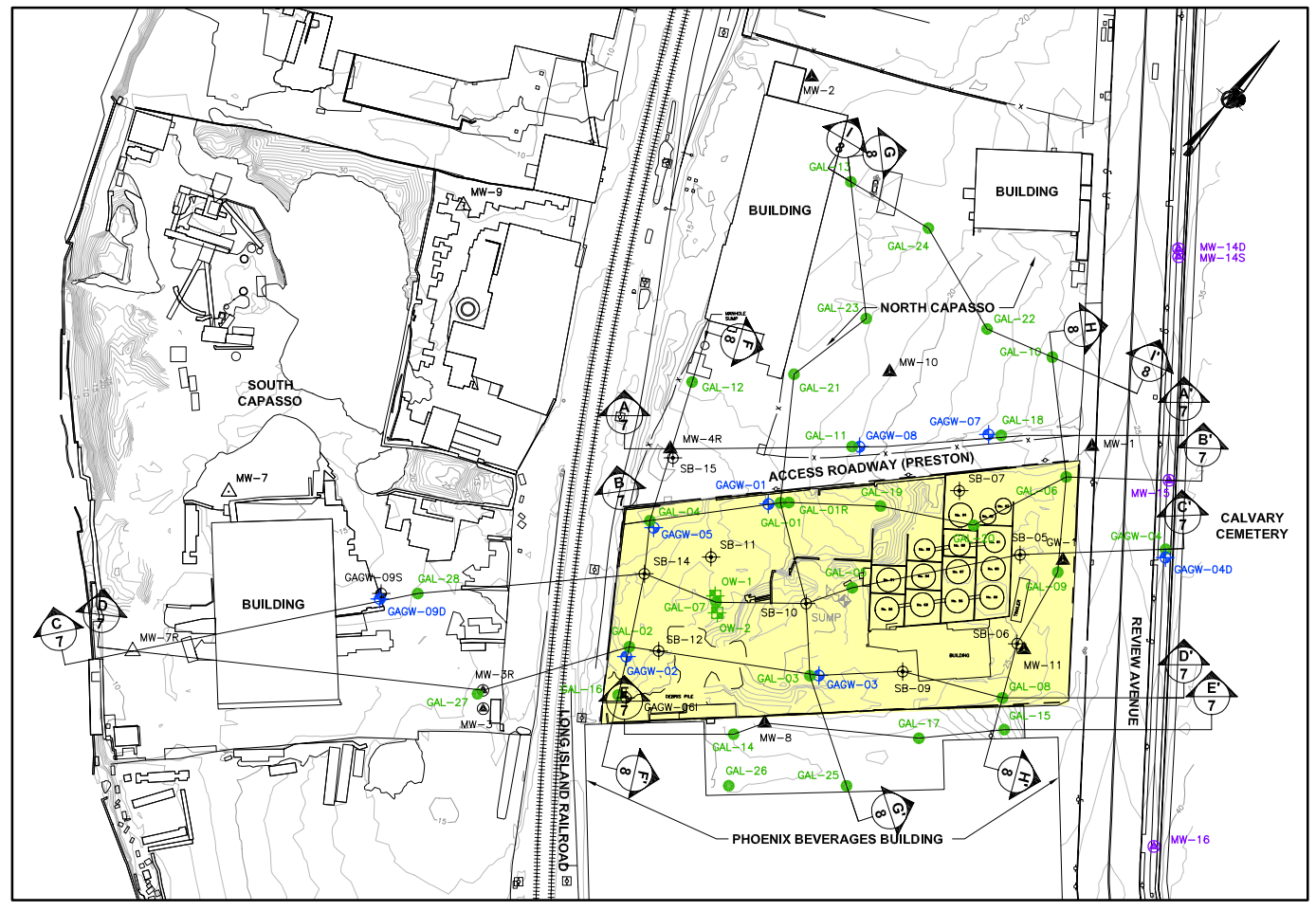
PROJECT No.	023-6151	FILE No.	02361510004
DESIGN	SDM	11/03/05	SCALE AS SHOWN REV. 0
CADD	AM	11/03/05	
CHECK	SDM	11/03/05	
REVIEW	RSW	11/03/05	

FIGURE 1

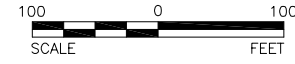




C
2 CROSS SECTION C-C'



CROSS SECTION LOCATION MAP (SEE NOTE 3)



LEGEND

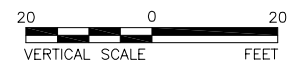
- INTERPRETED GROUNDWATER CONTOUR (OCTOBER 17, 2005) (DASHED WHERE INFERRED)
- DIRECTION OF GROUNDWATER FLOW
- WELL/BORING IDENTIFICATION
- TOP OF WELL/BORING
- TOP OF SCREENED INTERVAL
- BOTTOM OF SCREENED INTERVAL
- BOTTOM OF WELL/BORING
- GROUNDWATER ELEVATION (FT.-MSL) AS MEASURED ON OCTOBER 17, 2005
- URBAN FILL
- UPPER SAND AND GRAVEL UNIT (SILT, SILTY-SAND)
- LOWER SAND AND GRAVEL UNIT (GRAVEL HORIZONS MOSTLY IN THE WESTERN PORTION OF SITE)
- LOWER CLAY (RARITAN FORMATION) (UNDERLIES MOST OF SITE)

NOTES

- 1.) SUBSURFACE INFORMATION OBTAINED DURING THE REMEDIAL INVESTIGATION SUPPLEMENTED WITH BOREHOLE INFORMATION OBTAINED FROM PREVIOUS INVESTIGATION BY HALEY AND ALDRICH (MONITORING WELLS MW-3R, MW-4R, MW-7R, MW-8 AND MW-11).
- 2.) INTERPRETED BOUNDARIES AND VERTICAL EXTENT ARE APPROXIMATE.
- 3.) REFER TO FIGURES 7, 7A AND 8 OF THE REMEDIAL INVESTIGATION REPORT (GOLDER ASSOCIATES, JUNE 2005) FOR CROSS-SECTIONS A-A', B-B', D-D', E-E', F-F', G-G', H-H' AND I-I'.

REFERENCES

- 1.) BASE MAP TAKEN FROM DIGITAL FILE 2148.DWG, ENTITLED TOPOGRAPHIC SURVEY OF QUANTA RESOURCES SUPERFUND SITE, LONG ISLAND CITY, NY, PROVIDED BY GEOD CORPORATION, DATED JANUARY 11, 2004.
- 2.) WELL COORDINATES TAKEN FROM A MICROSOFT EXCEL FILES Quanta Samples and Wells.xls, 2148A 8-23-04.xls, 2148A 4-11-05.xls, AND 2340 MONITORING WELLS.XLS, PROVIDED BY GEOD CORP.

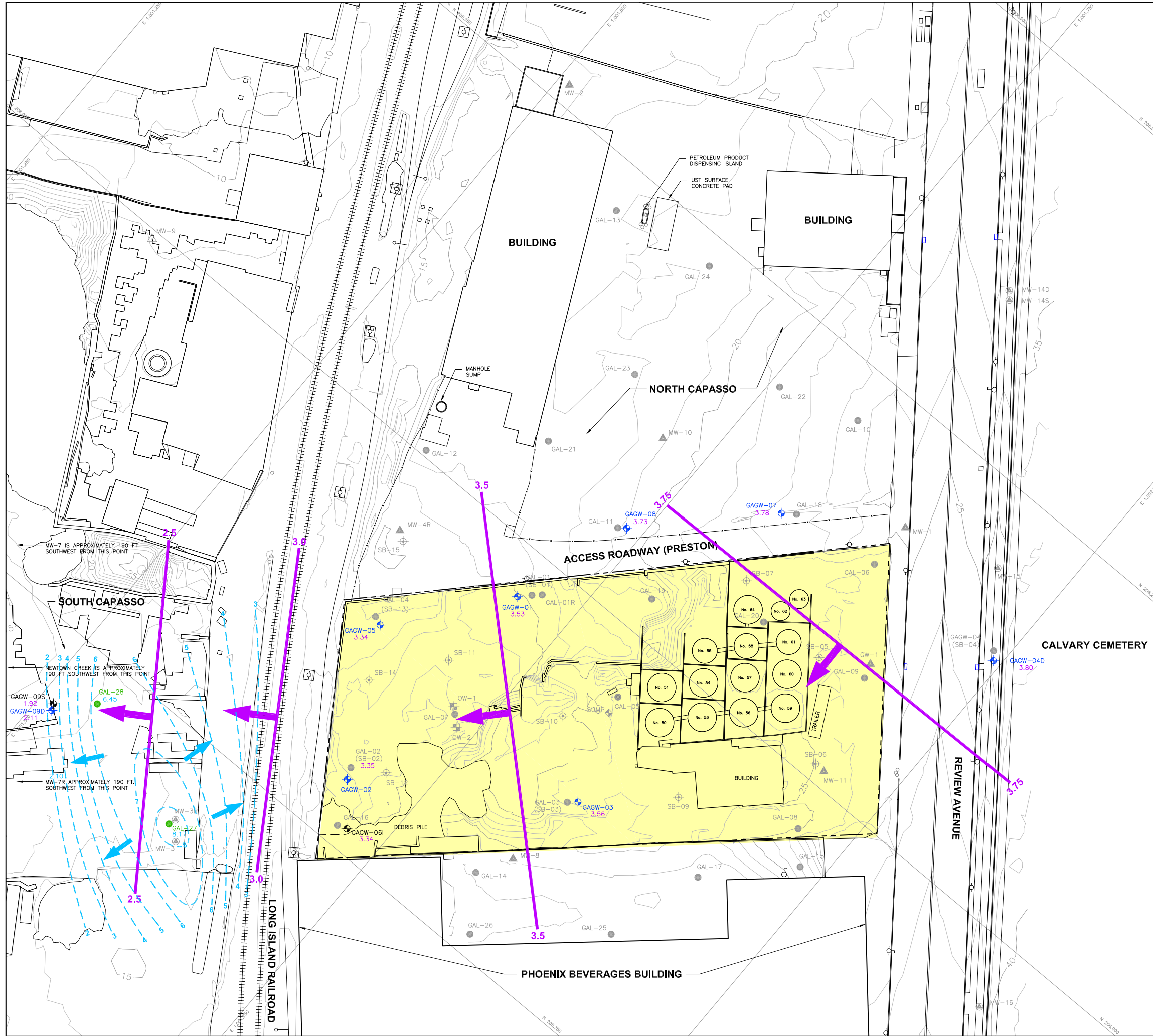


VERTICAL EXAGGERATION X2.5

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW
PROJECT: QUANTA RESOURCES SITE SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT QUEENS COUNTY, NEW YORK						
TITLE: GENERALIZED HYDROGEOLOGIC CROSS SECTION C-C'						
PROJECT No. 023-6151		FILE No. 02361510006				
CADD	SGM	11/03/05	SCALE AS SHOWN	REV.	0	
CADD	RS	11/03/05				
CHECK	SGM	11/03/05				
REVIEW	RSW	11/03/05				



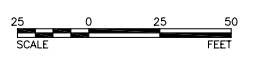
FIGURE 2



- LEGEND**
- SHALLOW GROUNDWATER MONITORING WELL (GOLDER ASSOCIATES 2004 AND 2005) (SEE REFERENCE 2)
 - DEEP GROUNDWATER MONITORING WELL (GOLDER ASSOCIATES 2003/2004/2005) (SEE REFERENCE 2)
 - LNAPL MONITORING WELL (GOLDER ASSOCIATES 2003/2004/2005) (SEE REFERENCE 2)
 - LNAPL MONITORING WELL (GOLDER ASSOCIATES 2003/2004/2005) (SEE REFERENCE 2)
 - SOIL BORING (GOLDER ASSOCIATES 2003/2004) (SEE REFERENCE 2)
 - ROEHR CHEMICAL INVESTIGATION WELL LOCATION (NOVEMBER 2000) (SEE REFERENCE 2)
 - EXISTING ON-PROPERTY AND OFF-PROPERTY MONITORING WELL LOCATION (SEE REFERENCE 2)
 - EXISTING OFF-PROPERTY MONITORING WELL LOCATION (LOCATION APPROXIMATE)
 - SUMP (SEE REFERENCE 2)
 - LNAPL PILOT TEST STUDY OBSERVATION WELL (SEE REFERENCE 2)
 - EXISTING OFF-PROPERTY MONITORING WELL LOCATIONS (SEE REFERENCES 5 AND 6)
 - EXISTING ABOVE GROUND TANK (REPORTED TO BE EMPTY AND DECONTAMINATED)
 - 3.6 INTERPRETED GROUNDWATER CONTOUR (OCTOBER 17, 2005) (DEEP MONITORING WELLS)
 - 3.34 INTERPRETED GROUNDWATER FLOW DIRECTION
 - 3.34 GROUNDWATER ELEVATION (FT.-MSL)
 - 6 INTERPRETED GROUNDWATER CONTOUR (OCTOBER 17, 2005) (DASHED WHERE INFERRED) (SHALLOW MONITORING WELLS)
 - 6.45 INTERPRETED GROUNDWATER FLOW DIRECTION
 - 6.45 GROUNDWATER ELEVATION (FT.-MSL)
 - QUANTA PROPERTY BOUNDARY (SEE REFERENCE 3)
 - RAILROAD
 - FENCE LINE
 - 5 FOOT CONTOUR LINE (FT.-MSL)
 - 1 FOOT CONTOUR LINE (FT.-MSL)

NOTE
 1.) FT.-MSL - FEET MEAN SEA LEVEL

- REFERENCES**
- 1.) BASE MAP TAKEN FROM DIGITAL FILE 2148.dwg, ENTITLED TOPOGRAPHIC SURVEY OF QUANTA RESOURCES SUPERFUND SITE, LONG ISLAND CITY, NY, PROVIDED BY GEOD CORPORATION, DATED JANUARY 11, 2004.
 - 2.) WELL COORDINATES TAKEN FROM A MICROSOFT EXCEL FILES Quanta Samples and Wells.xls, 2148A 8-23-04.xls, 2148A 4-11-05.xls, AND 2340 MONITORING WELLS.XLS, PROVIDED BY GEOD CORP.
 - 3.) PROPERTY BOUNDARY TAKEN FROM DIGITAL FILE 2148 Boundary.dwg, TITLED "MAP SHOWING BOUNDARY OF BLOCK 312 LOT 69", DATED APRIL 29, 2004, PROVIDED BY GEOD CORP.
 - 4.) DEBRIS PILE BOUNDARY REVISED PER FIELD OBSERVATIONS MADE BY GOLDER ASSOCIATES PERSONNEL DURING SITE VISITS.
 - 5.) LOCATION OF MW-9 DIGITIZED FROM HARD COPY FIGURE TITLED "GROUNDWATER CONTOURS", PROVIDED BY HALEY & ALDRICH, DATED FEBRUARY 2004.
 - 6.) LOCATION OF MW-7 DIGITIZED FROM HARD COPY FIGURE TITLED "SITE PLAN WITH SITE INVESTIGATION BORING LOCATIONS", PROVIDED BY ENVIRON, DATED SEPTEMBER 2000.



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	R/W
PROJECT						
QUANTA RESOURCES SITE SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT QUEENS COUNTY, NEW YORK						
TITLE						
INTERPRETED GROUNDWATER CONTOUR MAP (OCTOBER 2005)						

PROJECT No.	023-6151	FILE No.	02361510003
DESIGN	SDM 11/03/05	SCALE	AS SHOWN
CADD	AM 11/03/05	REV.	0
CHECK	SDM 11/03/05	FIGURE 3	
REVIEW	RSW 11/03/05		

ATTACHMENT A

RECORD OF BOREHOLE GAGW-09S

SHEET 2 of 2

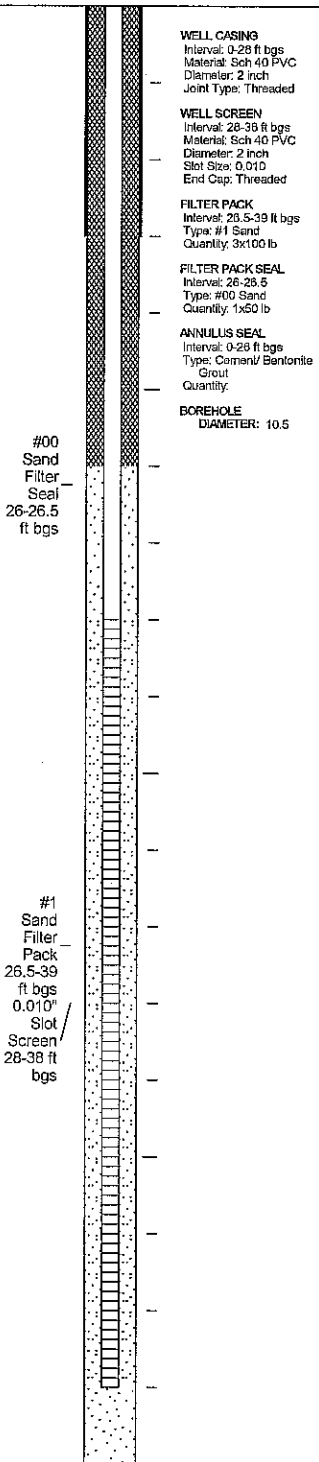
PROJECT: Quanta Resources Site
 PROJECT NUMBER: 023-6151
 DRILLED DEPTH: 39.0 ft
 AZIMUTH: N/A
 LOCATION: South Capasso Property

DRILL METHOD: Hollow-stem auger
 DRILL RIG: Mobile B-58
 DATE STARTED: 10/5/05
 DATE COMPLETED: 10/8/05
 WEATHER: Sunny

DATUM: Local
 COORDS: N: 205,700.9 E: 1,001,510.5
 GS ELEVATION: 13.3 ft
 TOC ELEVATION: 12.9 ft
 TEMPERATURE: 78-83 F

INCLINATION: -90
 DEPTH W.L.:
 ELEVATION W.L.:
 DATE W.L.:
 TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES						MONITORING WELL / PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS		
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	TYPE	BLOWS per 6 in	REC / ATT	PID per 6" (ppm)	Sample Interval			Laboratory Sample ID	Analyses
20		19.0 - 21.5 Wet, grayish brown, well graded, very loose M-C SAND, trace F rounded gravel. Slight HC odor. (Continued)	SW		-8.2	SS	1 0	2.0 2.0	2.0 2.0					
		21.5 - 25.5 Wet, gray, firm to soft CLAY, trace mica. No odor	CL		21.5	SS	2 2 3 6	2.0 2.0	0 0 0 0					
		25.5 - 29.5 Wet, olive green to grayish brown, compact F SAND, with clayey intermittent varve-like features. No odor	SC		-12.2 25.5	SS	2 2 3 2	2.0 2.0	0 0 0 0					
		29.5 - 33.0 Wet, tannish-brown, compact F SAND, trace C sub-rounded gravel. No odor	SP		-16.2 29.5	SS	11 12 15 17	2.0 2.0	0 0 0 0					
		33.0 - 39.0 Wet, grayish-brown, compact to dense F clayey SAND. No odor.	SC		-19.7 33.0	SS	9 9 13 24	2.0 2.0	0 0 0 0					
					-19.7 33.0	SS	47 50/4	0.4 2.0	0					
					-19.7 33.0	SS	35 39 44 50	0.4 2.0	0					
					-19.7 33.0	SS	9 11 11 12	1.4 2.0	0 0 0 0					
		Boring completed at 39.0 ft			-25.7									



QUANTA SOIL BORING QUANTA-1.GPJ GOLDR NJ-PA.GDT 11/3/05

LOG SCALE: 1 in to 2.5 ft
 DRILLING COMPANY: Ameridrill
 DRILLER: Andre Boutoille

GA INSPECTOR: J LH
 CHECKED BY: SDM
 DATE: 10/31/05



RECORD OF BOREHOLE GAGW-09D

SHEET 2 of 4
 INCLINATION: -90
 DEPTH W.L.:
 ELEVATION W.L.:
 DATE W.L.:
 TIME W.L.:

PROJECT: Quanta Resources Site
 PROJECT NUMBER: 023-6151
 DRILLED DEPTH: 73.0 ft
 AZIMUTH: N/A
 LOCATION: South Capasso Property

DRILL METHOD: Hollow-stem auger
 DRILL RIG: Mobile B-58
 DATE STARTED: 10/5/05
 DATE COMPLETED: 10/6/05
 WEATHER: Sunny

DATUM: Local
 COORDS: N: 205,696.6 E: 1,001,512.6
 GS ELEVATION: 13.3 ft
 TOC ELEVATION: 12.9 ft
 TEMPERATURE: 78-83 F

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES				MONITORING WELL / PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS	
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	TYPE	BLOWS per 6 in	REC / ATT			PID per 6" (ppm)
20	19.0 - 21.5	Wet, grayish brown, well graded, very loose M-C SAND, trace F rounded gravel. Slight HC odor. (Continued)	SW		-8.2	SS	1 0	2.0 2.0	2.0 2.5 2.0		
	21.5 - 25.5	Wet, gray, soft to firm CLAY, trace mica. No odor	CL		21.5	SS	2 2 5 6	2.0 2.0	0 0 0 0		
-10	25.5 - 29.5	Wet, olive green to grayish brown, compact clayey F SAND. Intermittent varve-like features. No odor	SC		-12.2 25.5	SS	2 2 3 2	2.0 2.0	0 0 0 0		
-15	29.5 - 33.0	Wet, tannish-brown, compact F SAND, trace C sub-rounded gravel. No odor	SP		-16.2 29.5	SS	11 12 15 17	2.0 2.0	0 0 0 0		
	33.0 - 39.0	Wet, grayish-brown, compact clayey F SAND. No odor.	SC		-19.7 33.0	SS	9 9 13 24	2.0 2.0	0 0 0 0		
-20	33.0 - 39.0	Wet, grayish-brown, compact clayey F SAND. No odor.	SC		-19.7 33.0	SS	47 50/4	0.4 2.0	0		
-25	39.0 - 41.0	Wet, Grayish-brown, compact M SAND and C sub-rounded gravel (gravel lense). No odor.	GP		-25.7 39.0	SS	35 39 44 60	0.4 2.0	0		
40	39.0 - 41.0	Wet, Grayish-brown, compact M SAND and C sub-rounded gravel (gravel lense). No odor.	GP		-25.7 39.0	SS	9 11 11 12	1.4 2.0	0 0 0 0		
	39.0 - 41.0	Wet, Grayish-brown, compact M SAND and C sub-rounded gravel (gravel lense). No odor.	GP		-25.7 39.0	SS	28 28 13 20	0.0 2.0	0		

WELL CASING
 Interval: 0-59 ft bgs
 Material: Sch 40 PVC
 Diameter: 2 inch
 Joint Type: Threaded

WELL SCREEN
 Interval: 59-69 ft bgs
 Material: Sch 40 PVC
 Diameter: 2 inch
 Slot Size: 0.010
 End Cap: Threaded

FILTER PACK
 Interval: 69-70 ft bgs
 Type: #1 Sand
 Quantity: 3x100 lb

FILTER PACK SEAL
 Interval: 54-58 ft bgs
 Type: #00 Sand
 Quantity: 1x50 lb

ANNULUS SEAL
 Interval: 0-66 ft bgs
 Type: Cement/ Bentonite Grout
 Quantity:

BOREHOLE
 DIAMETER: 10.5"

Cement Grout
 0-56 ft bgs

QUANTA SOIL BORING: QUANTA-1.GPJ GOLDRER NJ-PA.GDT 11/3/05

LOG SCALE: 1 in to 2.5 ft
 DRILLING COMPANY: Ameridrill
 DRILLER: Andre Boutoille

GA INSPECTOR: JLH
 CHECKED BY: SDM
 DATE: 10/31/05



RECORD OF BOREHOLE GAGW-09D

SHEET 3 of 4

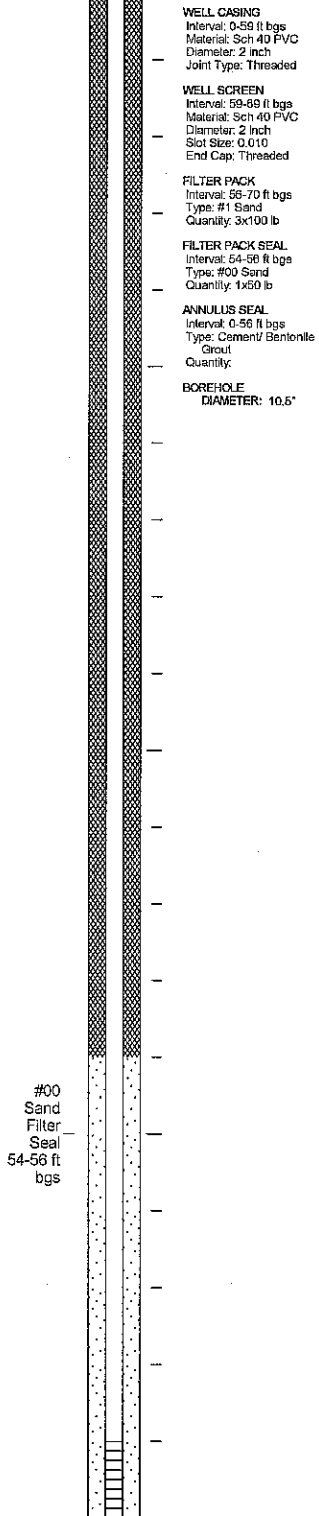
PROJECT: Quanta Resources Site
 PROJECT NUMBER: 023-6151
 DRILLED DEPTH: 73.0 ft
 AZIMUTH: N/A
 LOCATION: South Capasso Property

DRILL METHOD: Hollow-stem auger
 DRILL RIG: Mobile B-58
 DATE STARTED: 10/5/05
 DATE COMPLETED: 10/6/05
 WEATHER: Sunny

DATUM: Local
 COORDS: N: 205,696.6 E: 1,001,512.6
 GS ELEVATION: 13.3 ft
 TOC ELEVATION: 12.9 ft
 TEMPERATURE: 78-83 F

INCLINATION: -90
 DEPTH W.L.:
 ELEVATION W.L.:
 DATE W.L.:
 TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES							MONITORING WELL / PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS		
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	TYPE	BLOWS per 6 in	REC / ATT	PID per 6" (ppm)	Sample Interval	Laboratory Sample ID			Date/Time Collected	Analyses
40		39.0 - 41.0 Wet, Grayish-brown, compact M SAND and C sub-rounded gravel (gravel lense). No odor. (Continued)	GP		-27.7	SS	28 28 13 20	0.0 2.0	0						
		41.0 - 49.0 Wet, grayish-brown, compact M-C SAND, some F sub-rounded gravel. No odor.	SW		41.0	SS	23 10 13 7	0.5 2.0	0						
			SW			SS	6 11 12 18	0.7 2.0	0						
			SW			SS	8 9 9 10	1.0 2.0	0						
			SW			SS	10 12 9 8	1.0 2.0	0						
		49.0 - 61.0 Wet, grayish-brown, compact C-F SAND, little F-C sub-rounded to rounded gravel. No odor.	SW		-35.7 49.0	SS	15 10 10 9	1.0 2.0	0						
			SW			SS	10 7 7 6	0.8 2.0	0						
			SW			SS	8 9 10 10	1.0 2.0	0						
			SW			SS	15 17 18 17	1.0 2.0	0						
			SW			SS	18 20 20 15	0.8 2.0	0						
			SW			SS	29 14 16 17	1.0 2.0	0						



#00 Sand Filter Seal 54-56 ft bgs

Log continued on next page

QUANTA SOIL BORING QUANTA-1.GPJ GOLDR NJ-PA.GDT 11/3/05

LOG SCALE: 1 in to 2.5 ft
 DRILLING COMPANY: Ameridrill
 DRILLER: Andre Boutoille

GA INSPECTOR: JLH
 CHECKED BY: SDM
 DATE: 10/31/05



RECORD OF BOREHOLE GAGW-09D

SHEET 4 of 4

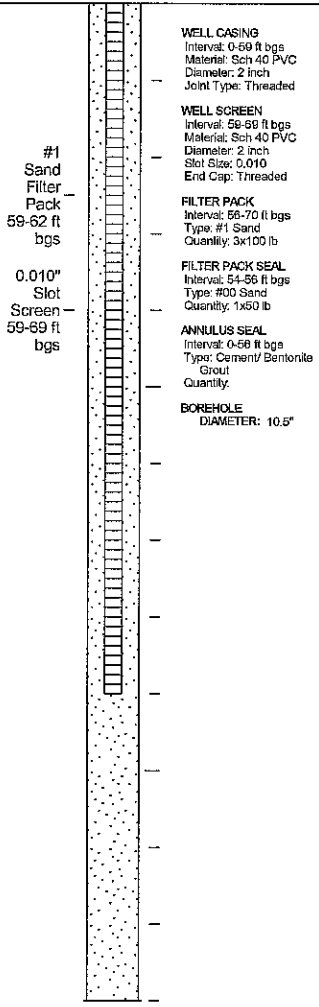
PROJECT: Quanta Resources Site
 PROJECT NUMBER: 023-6151
 DRILLED DEPTH: 73.0 ft
 AZIMUTH: N/A
 LOCATION: South Capasso Property

DRILL METHOD: Hollow-stem auger
 DRILL RIG: Mobile B-58
 DATE STARTED: 10/5/05
 DATE COMPLETED: 10/6/05
 WEATHER: Sunny

DATUM: Local
 COORDS: N: 205,696.6 E: 1,001,512.6
 GS ELEVATION: 13.3 ft
 TOC ELEVATION: 12.9 ft
 TEMPERATURE: 78-83 F

INCLINATION: -90
 DEPTH W.L.:
 ELEVATION W.L.:
 DATE W.L.:
 TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE			SAMPLES							MONITORING WELL / PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS		
		DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	TYPE	BLOWS per 6 in	REC / ATT	PID per ft (ppm)	Sample Interval	Laboratory Sample ID			Date/Time Collected	Analyses
60		49.0 - 61.0 Wet, grayish-brown, compact C-F SAND, little F-C sub-rounded to rounded gravel. No odor. <i>(Continued)</i>	SW		-47.7	SS	29 14 16 17	1.0 2.0	0						
		61.0 - 63.0 Wet, light brown, compact M SAND, trace C subangular gravel. No odor.	SP		61.0	SS	10 13 14	1.2 2.0	0						
		63.0 - 70.5 Wet, grayish-brown, compact to dense clayey F SAND. No odor.	SC		-49.7	SS	17 16 16 14	1.0 2.0	0						
-50								SS	18 20 18 16	0.5 2.0	0				
								SS	18 14 14 16	1.0 2.0	0				
-55								SS	18 16 15 15	1.0 2.0	0				
		70.5 - 73.0 Wet, reddish-white, very hard CLAY, trace F SAND. No odor.	CL		-57.2 70.5	SS	23 21 19 18	0.5 2.0	0						
		Boring completed at 73.0 ft													
-60															
75															
-65															
80															



QUANTA SOIL BORING QUANTA-1.GPJ GOLDER NJ-PA.GDT 11/3/05

LOG SCALE: 1 in to 2.5 ft
 DRILLING COMPANY: Ameridrill
 DRILLER: Andre Boutoille

GA INSPECTOR: JLH
 CHECKED BY: SDM
 DATE: 10/31/05



ATTACHMENT B



WELL DEVELOPMENT FIELD RECORD

JOB NAME Quant

JOB NO. 013-6151 WELL NO. GA6W-095

DEVELOPED BY JLH

DATE OF INSTALL. 10/7/05 SHEET 1 OF 1

STARTED DEVEL. 10/10/05 0830
DATE TIME

COMPLETED DEVEL. 10/10/05 1000
DATE TIME

W.L. BEFORE DEVEL. 11.21 10/10/05 0820
DEPTH DATE TIME

AFTER DEVEL. 11.41 10/10/05 1022
DEPTH DATE TIME

WELL DEPTH: BEFORE DEVEL. 37.34 TBC

AFTER DEVEL. 37.90 WELL DIA. (in) 2"

STANDING WATER COLUMN (FT.) 26.13

STANDING WELL VOLUME 4.26 gal.

SCREEN LENGTH 10 FT

DRILLING WATER LOSS NA gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS			Tub. OTHER	ORP mV	REMARKS
		SPEC. COND. (umhos/cm)	TEMP. (C)	pH (s.u.)			
10/10/05	2						
0835	10	1.11	16.37	11.83	999	-178	Surge
0845	20	2.08	15.15	8.20	862	-91	Surge 27.50
0855	30	2.11	14.97	7.69	999	-101	Surge
0907	40	0.91	14.77	7.47	782	-172	
0917	50	0.864	14.72	7.36	776	-160	
0925	60	1.160	14.64	7.24	812	-156	
0935	70	0.900	14.73	7.35	37.8	-152	27.81
0942	80	0.900	14.70	7.30	35.6	-153	
0950	90	0.910	14.69	7.30	33.2	-150	
0958	100	0.900	14.67	7.24	34.1	-153	
							yellowish tint / moderate HC 00m
		100 = TOTAL VOLUME REMOVED (gal.)					

DEVELOPMENT METHOD: Water pump / Teflon (poly) Tubing

NOTES:



WELL DEVELOPMENT FIELD RECORD

JOB NAME Pumpe
 DEVELOPED BY JCH
 STARTED DEVEL. 10/10/05 1084
DATE TIME
 W.L. BEFORE DEVEL. 11.25 10/10/05 0830
DEPTH DATE TIME
 WELL DEPTH: BEFORE DEVEL. 67.97
 STANDING WATER COLUMN (FT.) 58.72
 SCREEN LENGTH 10 Ft

JOB NO. 023-615 WELL NO. GASW09D
 DATE OF INSTALL. 10/6/05 SHEET 1 OF 1
 COMPLETED DEVEL. 10/10/05 11010
DATE TIME
 AFTER DEVEL. 11.27 10/10/05 1020
DEPTH DATE TIME
 AFTER DEVEL. 68.10 WELL DIA. (In) 2"
 STANDING WELL VOLUME 9.57 gal.
 DRILLING WATER LOSS NA gal.

DATE/TIME	VOLUME REMOVED (GALS) ✓	FIELD PARAMETERS				Turb. OTHER	ORP mv	REMARKS	DTW
		SPEC. COND. (umhos/cm) <small>us/cm</small>	TEMP. (C)	pH (S.U.)					
10/10/05									
0845	10	1.97	15.8	9.23	625	-125	(SURF)		
0855	20	1.99	15.0	7.78	203	-99		12.55	
0905	30	2.10	14.9	7.54	565	-101	(SURF)		
0915	40	2.11	14.8	7.46	84	-108			
0925	50	2.09	14.7	7.38	53	-121		11.85	
0935	60	2.03	14.7	7.30	46.1	-131			
0945	70	2.00	14.8	7.24	44.3	-127			
0952	80	2.08	14.8	7.27	40.3	-121			
1000	90	2.13	14.7	7.30	28.7	-117			
1010	100	2.08	14.8	7.22	30.1	-109			
							yellowish tint		
							Moderate HC ADON		
		= TOTAL VOLUME REMOVED (gal.)							

DEVELOPMENT METHOD: Whaler pump with Teflon Tubing

NOTES:

ATTACHMENT C

LOW FLOW GROUNDWATER PURGE/SAMPLE FIELD INFORMATION FORM



Site Quanta Resources Site
 Location: Long Island City, NY
 Project Number: 023-6251 Meter/Type/Serial #: Horiba U-22 serial # 06658
 Meter Calibrated @: 8:50 AM
MONITORING WELL ID: GAGW-095 Sampling Date/Time: 10/17/2005 / 13:00
 Sampler(s): Joe Huffman
 Depth to Water Prior to Purging [ft-bmp]: 10.8
 Well Casing Diameter [in]: 2 inch Sampling Device: Grufos submersible pump with teflon tubing
 Start Time (purging): 11:45 AM Sample Characteristics: yellowish tint, odor
 Purging Device: Grufos submersible pump PID Measurement of Well Headspace (ppm): 7.2
 As-Built Construction Well Depth [ft-bmp]: 38 ft Analytical Parameters: Chloride, Sulfate, Nitrate, TDS, TAL Metals, VOC, BNA, TOC, PCB, ALK
 Sounded Well Depth [ft-bmp]: 37.9

Weather Conditions: Sunny and Windy 72 F Fe+2 result (field measurement): N/A PPM

Time [hh:mm]	Temperature [°C]	pH [std]	Specific Conductance Circle One [S/m] or [mS/cm]	Turbidity [ntu]	Dissolved Oxygen [mg/l]	Redox Potential [mV]	Depth To Water [ft-bmp]	Volume Purged [liters]	Approximate Purge Rate [ml/min]	Observations (PID readings, sample characteristics, equipment problems, etc.)
11:47	16.3	8.42	0.948	990.0	8.72	-235	11.29	0.5	360	
11:53	17.5	7.82	0.887	980.0	3.41	-213	11.30	2.3	360	
11:58	17.7	7.82	0.868	908.0	1.67	-212	11.30	4.1	360	
12:03	17.9	7.67	0.839	692.0	1.12	-200	11.30	5.9	360	
12:08	17.8	7.59	0.827	578.0	0.71	-194	11.30	7.8	360	
12:13	17.9	7.55	0.82	409.0	0.22	-190	11.30	9.6	360	
12:18	17.9	7.54	0.817	350.0	0.10	-187	11.30	11.4	360	Cleaned out Flow Cell
12:23	17.8	7.57	0.822	133.0	0.00	-185	11.30	13.2	360	
12:28	17.8	7.54	0.83	85.0	0.00	-180	11.30	15.0	360	
12:33	17.8	7.54	0.833	50.0	0.00	-177	11.30	16.8	360	
12:38	17.7	7.51	0.839	36.4	0.00	-172	11.30	18.6	360	
12:43	17.7	7.50	0.84	33.7	0.00	-170	11.30	20.4	360	
12:48	17.7	7.50	0.842	32.5	0.00	-168	11.30	22.2	360	
12:53	17.7	7.50	0.844	31.9	0.00	-165	11.30	24.0	360	

Comments: Field Duplicate