932001

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10 April 2003

Mr. Michael Hinton, P.E.
Environmental Engineer II
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

RE: Requested Supporting Documentation for the Physical Characteristics of the Ground Water Recharging to Surface Water in the Southwest Corner of the Airco Parcel, Niagara Falls, New York
EA Project No. 12040.69

Dear Mr. Hinton:

As discussed during the 26 February 2003 progress meeting, you had requested that data detailing the quality and quantity of water discharging from the ground-water relief pipe be submitted to support the approval process, and development of site-specific performance criteria for the proposed treatment process. Provided with this letter are 6 figures detailing the water quality, including pH, chromium, and hexavalent chromium concentrations (Figures 1 and 2, respectively); quantity of water based on flow monitoring of the relief pipe (Figures 3 through 5); and a general site layout of the anticipated treatment system components (Figure 6). The layout drawing is conceptual; the final layout will be provided as an appendix to the Design-Build Work Plan, which will be submitted on 11 April 2003, and may vary from this conceptualized plan.

Figure 1 depicts the concentrations of total chromium and hexavalent chromium detected in the samples collected during the period December 2000 - December 2002. Figure 2 details the observed pH in samples collected for the same time period. Figures 3 and 4 show the results of the flow monitoring in the Fall of 2001, and the Spring through Fall of 2002, respectively. As noted in the annual report (EA 2003[1]), the data for the Spring 2002 were determined not to be accurate due to installation under submerged conditions. The data from May through October were deemed representative of ground-water discharge conditions. Figure 5 represents a plot of the observed discharge flow rate at the relief pipe versus the ground-water elevation at MW-06. The intent of this plot is to identify the correlation between the relative ground-water elevation in MW-06 as compared to observed low flow and peak flow conditions. As noted in Figure 5, at an elevation above 597.5 ft mean sea level, flow begins to discharge from the relief pipe, and appears to correlate consistently with changes in water table elevation.

1. EA Engineering, P.C. and its Affiliate EA Science and Technology. 2003. Fourth Quarter Year 2002 Monitoring Event Report and Annual Report for 2002, Site No. 932001, Airco Parcel, Niagara Falls, New York.

Based upon the available data, the treatment system will be configured for an annual average flow rate of approximately 7 gpm, which will be used while calculating the volume of precipitate to be produced, and the carbon dioxide and zero valence iron consumption rates. The system is anticipated to be configured to process up to a peak flow of 15 gpm. The engineered wetland will be designed to handle the peak treatment system flow, plus the 100-year storm event.

As noted in the Year 2000, 2001, and 2002 Annual Reports, the constituents of concern for the ground water recharging to surface consistently include pH, chromium, and hexavalent chromium. Therefore, EA is requesting that the discharge limits to be imposed under the Interim Remedial Measure Program be focused on those constituents that are specifically targeted for treatment.

Should you have any questions or comments regarding the materials presented herein, please do not hesitate to contact me at (845) 565-8100.

Respectfully,

EA ENGINEERING P.C.

Charles E. McLeod, Jr., P.E.
Vice President

CEM/caw
Attachments

cc: M. Resh (BOC)
M. Graham (Phillips Lytle)
S. Rival (EA)

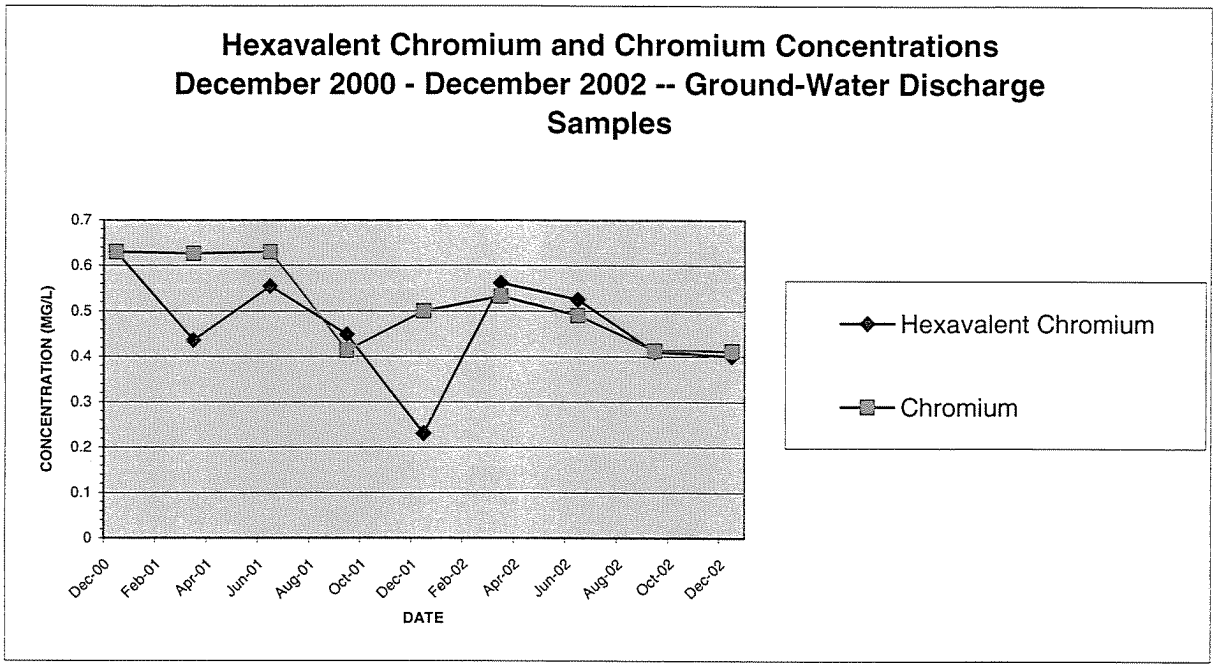


Figure 1. Chromium concentrations observed in the ground-water relief pipe during post-closure monitoring.

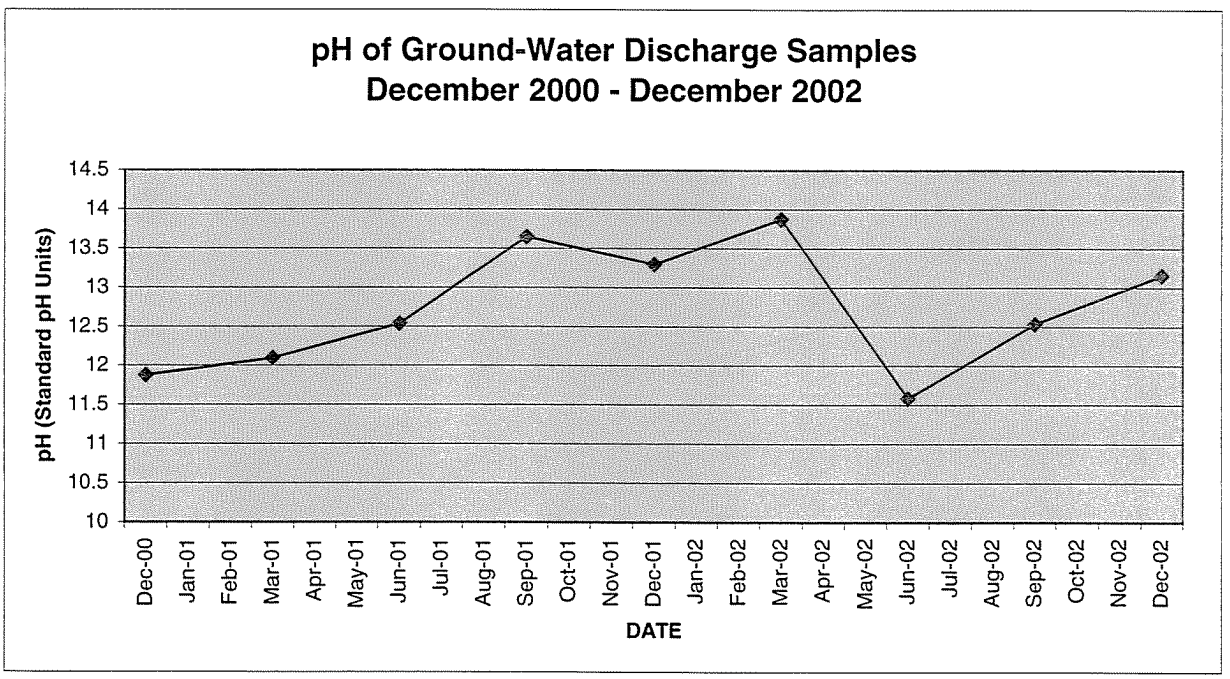


Figure 2. Observed pH of the ground water recharging at the relief pipe during post-closure monitoring.

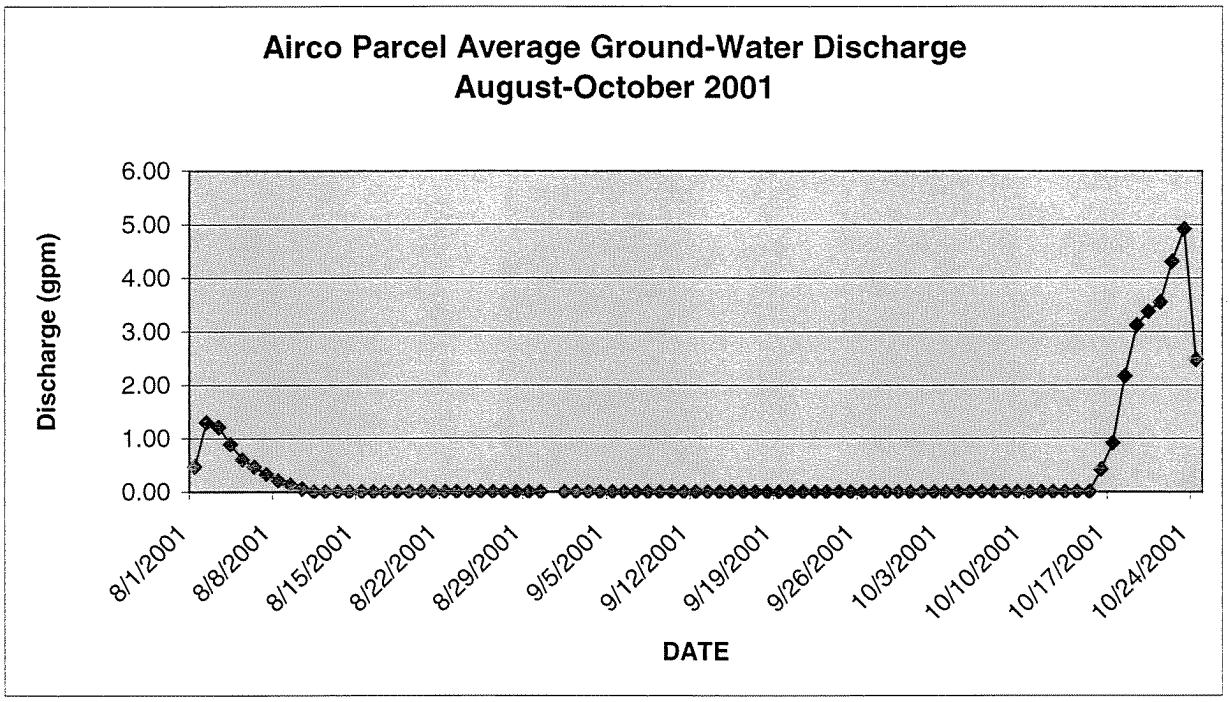


Figure 3. Relief pipe ground-water discharge observed during August-October 2001, Airco Parcel, Niagara Falls, New York.

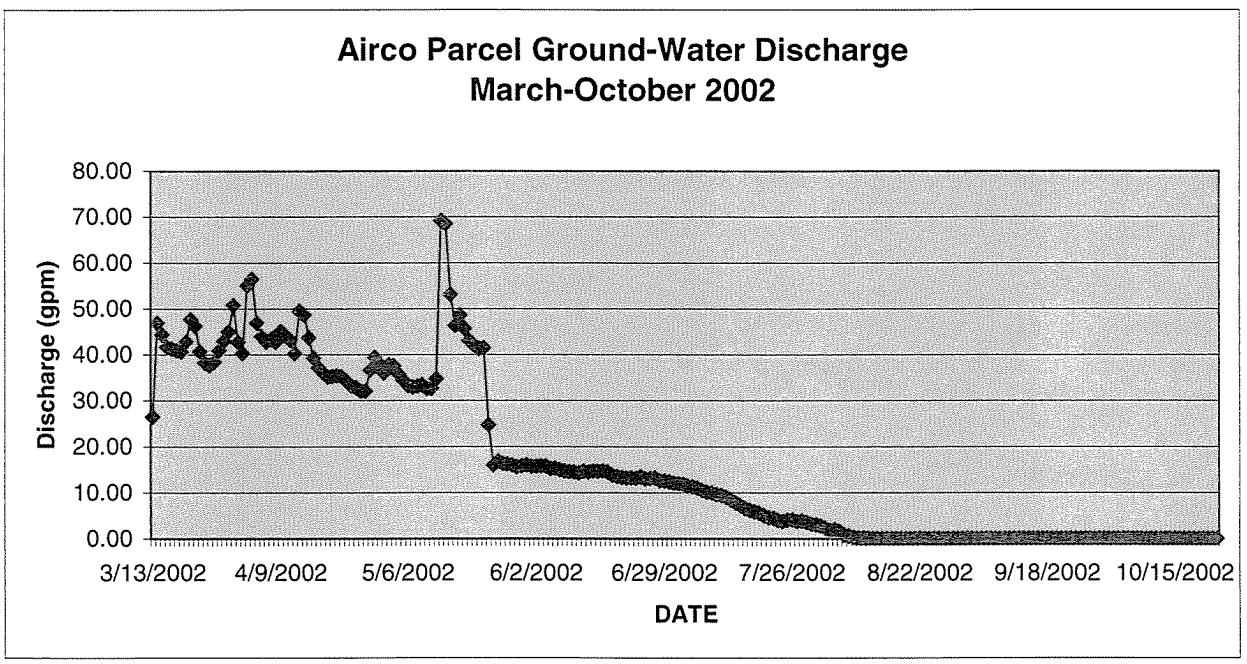


Figure 4. Relief pipe ground-water discharge observed during March-October 2002, Airco Parcel, Niagara Falls, New York.

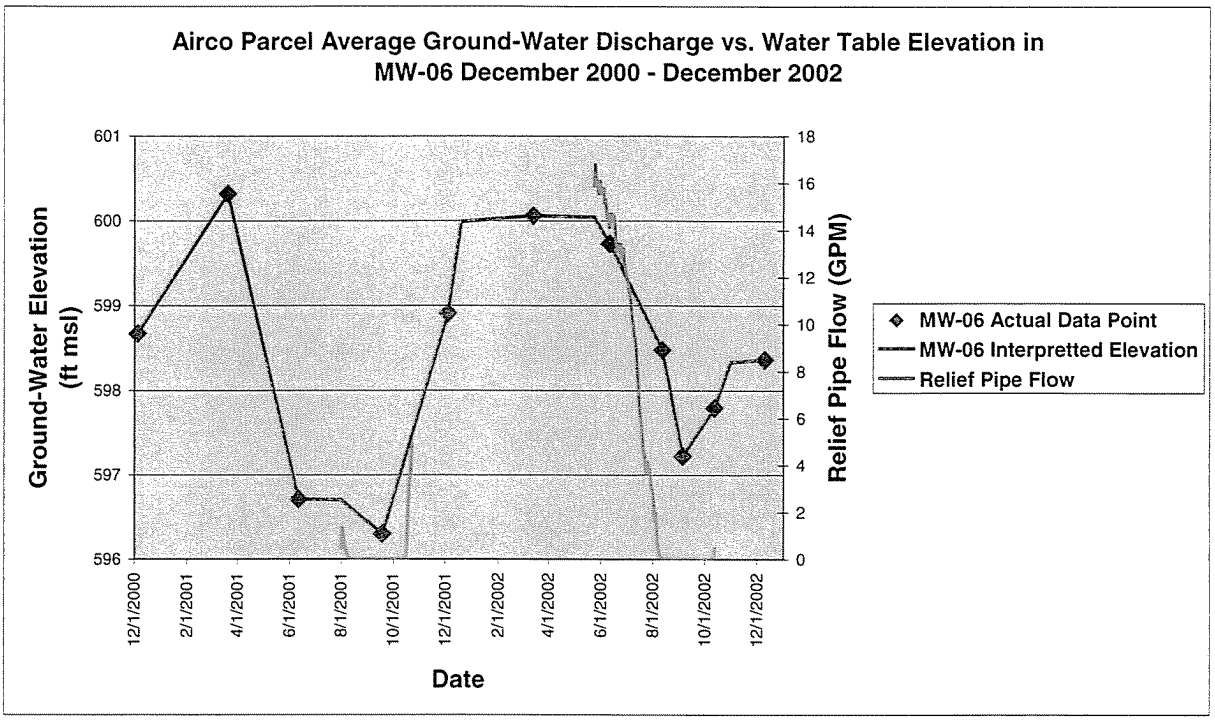


Figure 5. Monitoring well gauging data for MW-06 plotted versus the observed relief pipe ground-water discharge from December 2000 through December 2002, Airco Parcel, Niagara Falls, New York.

932001

Admin. Record

Design-Build Work Plan
for the
Airco Parcel, Niagara Falls, New York

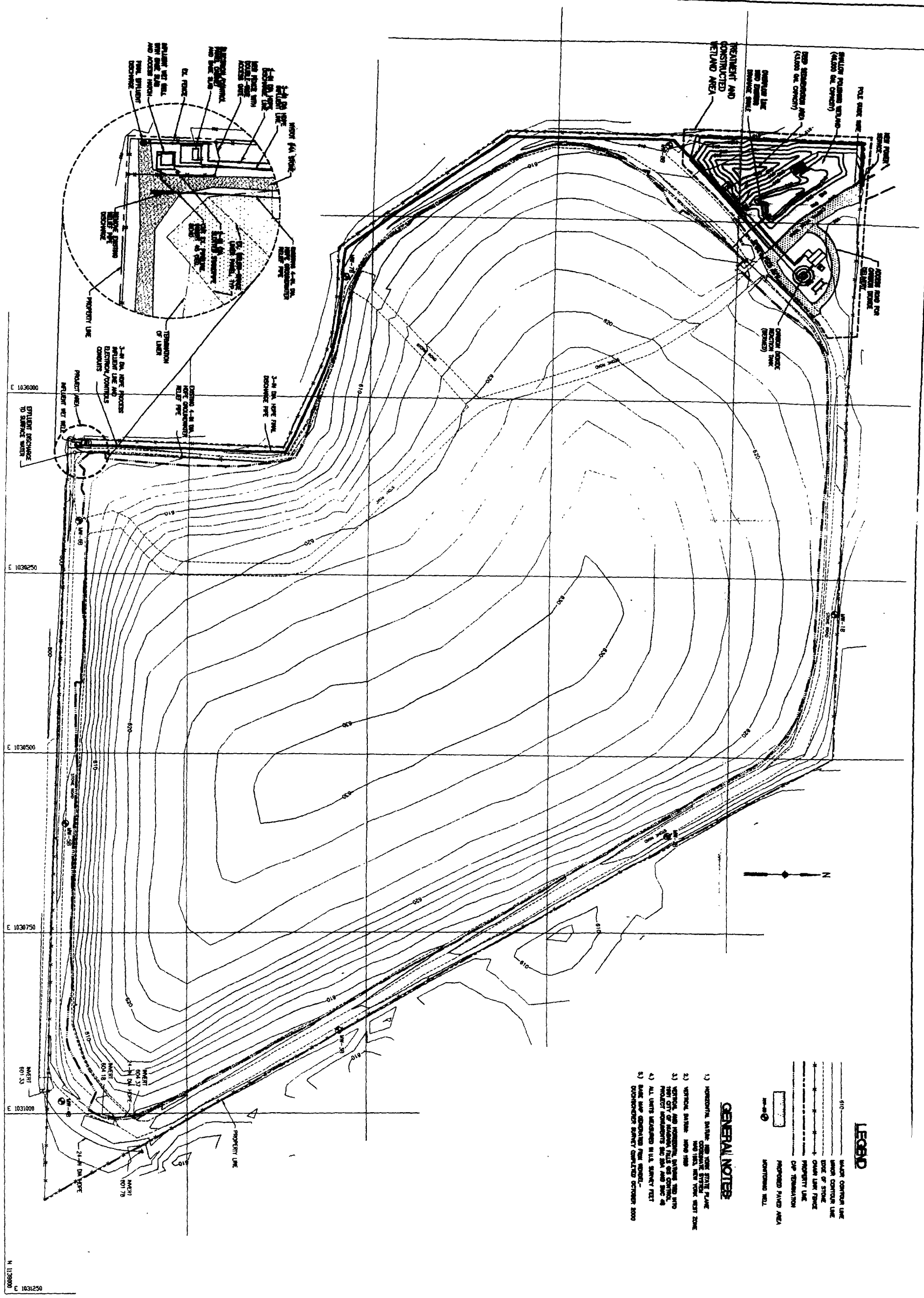
Prepared for

The BOC Group
100 Mountain Avenue
Murray Hill, New Jersey 07974

Prepared by

EA Engineering, P.C. and Its Affiliate
EA Science and Technology
3 Washington Center
Newburgh, New York 12550
(845) 565-8100

April 2003
Revision: 0
Project No. 12040.83



LEGEND

- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- EDGE OF STONE
- CHAIN LINK FENCE
- PROPERTY LINE
- CAP TERMINATION
- PROPOSED PAVED AREA
- MW-2 MONITORING WELL

GENERAL NOTES:

1) HORIZONTAL DATUM: NEW YORK STATE PLANE COORDINATE SYSTEM, NAD 1983, WEST ZONE
2) VERTICAL DATUM: NGVD 1988
3) VERTICAL AND HORIZONTAL DATUMS TIED INTO 1991 CITY OF NIAGARA FALLS GPS CONTROL PROJECT MONUMENTS 502 AND 504 AND BMC 48
4) ALL UNITS MEASURED IN U.S. SURVEY FEET
5) BASE MAP GENERATED FROM GENERAL-DUCKWORTH SURVEY COMPLETED OCTOBER 2000

EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY
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DATE: APRIL 2003
DESIGNED BY: SJR
DRAWN BY: JAP
CHECKED BY: SER
PROJECT MANAGER: CEN
PROJECT NUMBER: 13906.03
SCALE: AS SHOWN
FILE NAME:
DRAWING NUMBER:
SHEET NUMBER: 6 OF 6

AIRCO PARCEL
GROUNDWATER TREATMENT SYSTEM
NIAGARA FALLS, NEW YORK

FIGURE 6 – PROPOSED SITE PLAN

SEAL

REVISIONS			
NO.	DATE	BY	DESCRIPTION