

engineering and constructing a better tomorrow

January 31, 2011

Mr. Eugene Melnyk New York State Department of Environmental Conservation Division of Environmental Remediation, Region 9 270 Michigan Avenue Buffalo New York 14203-2999

## Subject: 2010 Periodic Review Report Buffalo Color Corporation – Area "D" Site No. 915012

Dear Mr. Melnyk:

MACTEC Engineering and Consulting, Inc. (MACTEC) is submitting this Periodic Review Report (PRR) for the Buffalo Color Area "D" Site (Site) on behalf of the property owner, South Buffalo Development LLC (SBD), in response to your letter to dated December 1, 2010. The remainder of this document follows the outline presented in your December 1<sup>st</sup> letter. The completed Site Management Periodic Review Report (PRR) Notice - Institutional and Engineering controls Certification Form is provided herein as Attachment A. A report titled "2010 Post-Remedial Construction Annual Operations and Maintenance Report, Buffalo Color Corporation Area "D" (O&M Report), is included herein as Attachment B.

- I. Introduction
  - A. Site Summary:

The remedial objectives of the remedy are to eliminate potential direct contact with soils containing contaminant concentrations exceeding New York State Department of Environmental Conservation (NYSDEC) standards and to eliminate the potential discharge of impacted groundwater to the Buffalo River. The key remedial actions for the Site included:

- Stabilization of the shoreline along the Buffalo River and planting appropriate vegetation to enhance aquatic and upland habitat;
- Consolidation of contaminated soil on-site, regrading and capping of the soils;
- Construction of a hydraulic barrier (i.e., slurry wall) along the perimeter of the site (Figure 1 in attached O&M report, Appendix B);

- Installation and operation of a groundwater extraction system (EW-1 through EW-4) to convey extracted groundwater to the treatment system located on Area "A".
- Installation of groundwater elevation monitoring well network to verify that an inward gradient is maintained across the hydraulic barrier. (These wells are referred to with the "OW" prefix on Figure 1 in the attached 2010 O&M report)

During 2010, the following routine Operations and Maintenance (O&M) activities have been completed in accordance with Post-Remedial Construction Operation and Maintenance Plan, prepared by Parsons Engineers dated January 1999 (referred to hereafter as the O&M Plan):

- Quarterly site inspections,
- Monthly groundwater extraction system performance monitoring, and
- Annual reporting.
- B. Effectiveness Monitoring: The cap system is intact with suitable vegetative cover. The groundwater extraction system is effectively maintaining a minimum one-foot head differential between observations on the outside of the hydraulic barrier (near the Buffalo River) and corresponding interior observation wells. When the differential falls below one-foot, the extraction system is operated and effectively lowers the water table within the boundaries of the hydraulic barrier.
- C. Compliance: No areas of non-compliance have been identified.
- D. Recommendations: No changes to the 1999 O&M Plan are currently warranted or recommended. Routine O&M will continue in 2011.
- II. Site Overview
  - A. Site Location: The site plan is illustrated on Figure 1 of the attached 2010 O&M report. The site is surrounded on the east, west and south by the Buffalo River. To the north is Buffalo Color Area "A" property. Prior to remediation, soils and groundwater containing contaminant concentrations exceeding relevant NYSDEC standards were identified on the site.

It was determined that impacted groundwater was discharging to the Buffalo River. The site remedy included construction of a hydraulic barrier (i.e., slurry wall) around the site as shown on Figure 1, construction of a groundwater extraction system and monitoring network to maintain an inward hydraulic gradient and, construction of a cap system to minimize potential direct contact with the impacted site soils and minimize ground water recharge from precipitation.

Extracted groundwater is conveyed to treatment system, located on Area "A", where it is combined with groundwater from that area, treated and discharged to the Buffalo Sewer Authority (BSA) pursuant to a BSA discharge permit.

- B. Chronology: Remediation of the Site began on July 24, 1996. Planting of wetland and woody vegetation to enhance aquatic and upland habitat was completed during the spring of 1999. Replanting of trees in several areas and construction of the cap, hydraulic barrier and extraction system was completed by November 2000.
- III. Evaluation of Remedy Performance, Effectiveness and Protectiveness
  - A. The performance, effectiveness and protectiveness of the remedy is verified by ensuring that the cap system is intact as constructed and that an inward hydraulic gradient is maintained between the observation wells "outside" of the hydraulic barrier (i.e., closest to the Buffalo River- also referred to as exterior wells) and the observation wells "inside" the hydraulic barrier (interior wells). Specifically, a minimum of one-foot hydraulic head differential is to be maintained. During 2010, the head differential was maintained except during January and February, when the differential fell below one-foot but the inward gradient was still maintained. Therefore, the extraction well system was activated and was kept operational until a minimum of two-foot of head differential was established in accordance with the 1999 O&M Plan.
- IV. IC/EC Plan Compliance Report An IC/EC Plan was not required for this site. IC/EC compliance is addressed in the 1999 O&M Plan
  - A. Monitoring Plan Compliance Report A separate Monitoring Plan is not required for this site. Monitoring requirements are addressed in the 1999 O&M Plan.
- V. Operations and Maintenance Plan Compliance Report
  - A. Components of the O&M Plan: Requirements of the 1999 O& M Plan are:
    - Monthly Groundwater Extraction System Maintenance During this activity, the O&M contractor under contract to Honeywell (OMI) inspects the extraction and observation wells; records groundwater level measurements at each observation well; activates the extraction pumps for a few minutes to ensure that they are operational and to minimize potential for scale accumulation in the lines; and records flow totalizer readings from the extraction system. This information is reported to Honeywell monthly and summarized in the annual O&M report (Attachment B).
    - Monthly Treatment Plant Monitoring: Groundwater from the Area "D" extraction system is conveyed to the Area "A" treatment system. The combined groundwater from Area "A" and Area "D" is treated and discharged to the BSA. Discharge samples are collected monthly and the data is submitted to the

NYSDEC and BSA on a quarterly basis as specified in the BSA discharge permit.

- Quarterly Site Inspections: During each quarterly site inspection, OMI inspects the condition of the cap (e.g., vegetative cover, animal burrows, drainage, etc.); the gas vents to ensure that they are in good condition and not obstructed; and the shoreline to verify stability and suitable vegetative cover. Information from the quarterly inspections are included on Site Inspection Checklist forms which are included in the 2010 O&M Report (Attachment B).
- B. Summary of O&M Completed During 2010: Monthly system monitoring and quarterly inspections were completed in accordance with the O&M Plan during 2010. The following summarizes the observed conditions:
  - In February of 2010, it was noted that the pump in Extraction Well EW-2 appeared to be above the water level and not pumping water. This well will be further evaluated during 2011 to determine if an adjustment of the pump level is necessary.
  - During the January and February 2010 monthly monitoring events, the head differential between certain interior and exterior observation wells fell below one-foot. Therefore, the extraction pump system was activated and periodic pumping occurred until a 2 foot differential was obtained at each observation well par.
  - On-going trapping of burrowing animals and filling of burrows.
- C. Evaluation of Remedial Systems: During 2010, the Area D remedial system appears to be effectively achieving the objectives of the remedial action, as described in the attached 2010 O&M Report.
- D. O&M Deficiencies: No deficiencies in complying with the O&M Plan have been noted.
- E. Conclusions and Recommendations: Conclusions and recommendations from the attached 2010 O&M report are:
  - The remedial goals are being met.
  - The groundwater extraction system will continue to be operated as necessary to maintain the necessary water level differential between interior and exterior wells.
  - Extraction well EW-2 will continue to be observed and no pumping performed while the water level is below the pump head. If necessary, an adjustment will be made to the pump level.

• Routine O&M activities should continue during 2011.

VI. Overall PRR Conclusions

- A. Compliance: Activities completed during 2010 complied with the OM&M Plan.
- B. Performance and Effectiveness of the Remedy: The condition of the cap system and consistent inward gradient across the hydraulic barrier indicate that the remedy is performing effectively.
- C. Future PRR submittals: It is currently expected that the next PRR will be submitted on or about February 1, 2012.

## Closing

Please contact Mr. John Scrabis at (412) 279-6661 with any questions or comments on this submittal.

Respectfully,

MACTEC Engineering and Consulting, Inc.

Eric Weiler Project Scientist

John Scrabis Sr. Principal Engineer

Attachments

cc: J. Yensan (SBD) E. Melnyk (NYSDEC Region 9) R. Galloway (Honeywell) J. Mojka (Honeywell)



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## ATTACHMENT A

## PRR NOTICE IC/EC CONTROLS CERTIFICATION FORM



## Enclosure 1 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION Site Management Periodic Review Report Notice Institutional and Engineering Controls Certification Form



Site Details Site No. 915012	Box 1	
Site Name Buffalo Color Area "D"		
Site Address: 1337 South Park Avenue Zip Code: 14202 City/Town: Buffalo County: Erie Site Acreage: 19.0		
Reporting Period: November 18, 2009 to January 04, 2011		
	YES	NO
1. Is the information above correct?	N,	
If NO, include handwritten above or on a separate sheet.		
<ol><li>Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?</li></ol>		×
<ol> <li>Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?</li> </ol>		8
4 Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		2
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		K.
	Box 2	
	YES	NO
6. Is the current site use consistent with the use(s) listed below?	×	
7. Are all ICs/ECs in place and functioning as designed?	K	
IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below a DO NOT COMPLETE THE REST OF THIS FORM.	nd	
A Corrective Measures Work Plan must be submitted along with this form to address th	ese issi	ues,
Signature of Owner, Remedial Party of Designated Bepresentative		

## Description of Institutional Controls

Parcel <u>Owner</u> 122.160-1-10 South Buffalo Development, LLC Institutional Control

Landuse Restriction O&M Plan Site Management Plan

## Description of Engineering Controls

CANA A CONST

Engineering Control

122.160-1-10

Parcel

Cover System Fencing/Access Control Groundwater Containment Pump & Treat

## Control Description for Site No. 915012

#### Parcel: 122.160-1-10

Engneering controls consist of a soil-bentonite slurry wall surrounding Area "D"; a multilayered soil/synthetic membrane cap on a graded base over the entire site within the limits of the slurry wall; extracting and treating groundwater, and discharging the treated groundwater to the Buffalo Sewer Authority sanitary sewer; river shore stabilization using riprap; security fencing; and monitoring well network.

Box 4

2		10 A A A A A		
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## Periodic Review Report (PRR) Certification Statements

I certify by checking "YES" below that:

 a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

NO

If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control,

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) If a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

3

#### IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

#### IC CERTIFICATIONS SITE NO: 915012

Box 6

\_a\_[1]\_1i Data

Box 7

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE incertify that all information and statements in Boxes 2 and/or 3 are true; i) understand that a false statement made herein is punishable as a Class, A' misdemeanor, pursuant to Section 210:45 of the RenaliLaw

Jon M. Williams at 333 Ganson St. Buffalo, NY 14203

am certifying as <u>Bresident of South Buffelo Development LLC</u> (Owner <del>or Remedial Dariy</del>) by its Manager SBD Holdings I, Inc. for the Site named in the Site Details Section of this form

Signature of Owner or Remedial Party Rendering Certification

IC/EC CERTIFICATIONS

Professional Engineer Signature

certify that all information in Boxes 4 and 5 are true. Junderstand that a false statement made herein is plinishable as a Glass. AV misdemeanor, pursuant to Section 240.45 of the Penal Law

Mark Stelmack at <u>SII Congress SF, Portland, ME 04104</u> Dintibusiness address for the South Buffalo Development, LLC (Owner groups diatrany) am certifying

Signature of Professional Engineers for the Owner or Remedial Party, Rendering Certification

Jan. 31, 2011

Slamp (Required for PE)

## ATTACHMENT B

## 2010 POST-REMEDIAL CONSTRUCTION ANNUAL OPERATIONS AND MAINTENANCE REPORT

# 2010 POST-REMEDIAL CONSTRUCTION ANNUAL OPERATIONS AND MAINTENANCE REPORT

# **BUFFALO COLOR CORPORATION AREA "D"**

Buffalo, Erie County, New York

(NYSDEC Site No. 9-15-012)

**SUBMITTED TO:** 



The New York State Department of Environmental Conservation Division of Hazardous Waste Remediation

**SUBMITTED BY:** 



101 Columbia Road Morristown, NJ 07962

PREPARED BY:

MACTEC Engineering and Consulting, Inc.

800 North Bell Avenue, Suite 200 Pittsburgh, Pennsylvania 15106 (412) 279-6661 Fax (412) 279-8567

January 2011

## 2010 POST-REMEDIAL CONSTRUCTION ANNUAL OPERATIONS AND MAINTENANCE REPORT

## BUFFALO COLOR CORPORATION AREA "D" BUFFALO, NEW YORK

Prepared for:

## HONEYWELL

Morristown, NJ 07962

1. L

Eric Weiler Project Scientist

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John M. Scrabis Senior Principal Engineer

MACTEC Engineering and Consulting, Inc. Pittsburgh, Pennsylvania

January 2011

Project 3410070501

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1 Site Plan

P:\PROJECTS\Honeywell\Buffalo NY\Buffalo Color Area D\3410070501 2007 OM&M\FINAL DELIVERABLES\Final 2010 Area D PRR\Buffalo Color Area D 2010 Annual Report.docx

## **1.0 INTRODUCTION**

In accordance with the New York State Department of Environmental Conservation (NYSDEC) Order on Consent (Index No. B9-0014-84-01RD), Honeywell (formerly AlliedSignal Inc.), performed a remedial action and is providing long-term operations and maintenance (O&M) at the Buffalo Color Area "D" Site (Site). The activities described in this report were completed in accordance with the Post-Remedial Construction Operation and Maintenance Plan (Parsons Engineers, January 1999).

The primary remedial objectives at the Site are to eliminate the potential for direct contact with impacted soils and to eliminate the potential for impacted groundwater to discharge to the Buffalo River. The key remedial actions for the Site included stabilizing the river bank and planting appropriate vegetation to enhance aquatic and upland habitat; consolidating waste; regrading and capping of the soils within the Site; constructing a hydraulic barrier (i.e., slurry wall) around the perimeter of the site (Figure 1); collecting and treating non-aqueous phase liquid (NAPL) and groundwater; and long-term groundwater monitoring.

Remediation of the Site began on July 24, 1996. Planting of wetland and woody vegetation to enhance aquatic and upland habitat along the Buffalo River was completed during the spring of 1999. Replanting of trees in several areas was completed on November 2, 2000.

This annual report has been prepared by MACTEC Engineering and Consulting, Inc. (MACTEC) on behalf of Honeywell to summarize O&M activities completed from January 1, 2010 through December 31, 2010 for the site. The site plan is shown on Figure 1.

## **1.1 PROCEDURES**

The following O&M activities occurred at the Site during 2010.

#### **1.1.1 Treatment Plant**

#### 1.1.1.1 Treatment Plant Flow Rate

When the treatment plant is operated, the flow rate is measured with Foxboro magnetic flow transmitters. Influent and effluent flow rate and totals are cumulative and recoverable using the system Programmable Logic Controller (PLC). The average influent and effluent flow rates are calculated, and the total volume (gallons) discharged from the treatment facility is recorded.

#### 1.1.1.2 Sampling Procedure

No sampling was conducted for Area D specifically. Sampling was conducted monthly in accordance with the Buffalo Sewer Authority (BSA) Permit for the combined Area A/Area D groundwater discharge. The 2010 Discharge Monitoring Reports for the combined discharge are included in Appendix A.

#### 1.1.1.3 System Maintenance

Maintenance activities were performed routinely by Honeywell's O&M contractor, OMI, for the Area D remediation system on a monthly basis or as needed throughout the year. During the reporting period, OMI visited the site for measurement of water levels, site inspection and routine maintenance approximately once per month. Relevant information from those visits is provided in the following sections.

#### **1.1.2 Observation Wells**

The water level in each of the twelve observation wells was measured by OMI approximately monthly. The water levels were measured with an electronic water level indicator, and reported as an elevation above mean sea level. Observation wells located inside the perimeter of the containment wall are labeled with an "I" (e.g. OW-2I), whereas those outside of the wall were labeled with an "E" (e.g. OW-2E), as shown on Figure 1.

The water level measurements were used to prepare the hydrographs provided in Appendix B. The table provided in Appendix C presents the measured groundwater levels across the containment wall. An adequate inward hydraulic gradient (i.e., greater than one foot difference between corresponding I and E wells) was measured during the majority of the 2010 monitoring events. The inward gradient measurements of less than one foot were recorded at all the observation wells during January 2010 and at one observation well set in February 2010. At no time did an outward gradient occur. The pumping system was activated when observed water level measurements fell below the one foot difference to mitigate any effects that external water level fluctuations may have on the gradient. The system operated until the gradient returned to acceptable levels.

Initially, when the pumps from Area D were activated, flow was confirmed from pumps in extraction wells EW-1 and EW-3. Pump EW-4 was repaired and put back online in February of 2010. Pump EW-4 was found to be deficient in the 4<sup>th</sup> Quarter of 2009. Pump EW-2 does not collect any groundwater because it is above the groundwater. During 2011, conditions at EW-2 will be evaluated to determine if an adjustment to the pump intake elevation is necessary. With the limited deficiencies at EW-4 and EW-2 throughout the year, the overall effect of the pumping was a balanced decline of internal water levels at all six observation points. Also, there was no impact on the ability of the system to draw down the water table to acceptable levels.

## **1.1.3 Site Inspections**

Quarterly inspections were completed by OMI on February 15, April 22, August 16, and October 27, 2010. The inspections were conducted in accordance with the Post-Remedial Construction Operation and Maintenance Plan, dated January 1999. The shoreline, wetlands, wells, drainage, gas vents, and cap were visually inspected during each event. The results of the inspections are included in Appendix D.

## 2.0 RESULTS

## 2.1 TREATMENT SYSTEM

## 2.1.1 Discharge

The Area D groundwater extraction system was operated intermittently during 2010 to maintain an inward gradient. Approximately 233,440 gallons of groundwater was pumped from Area D during the 2010 period, as discussed in Section 2.2.

## 2.1.2 Influent/Effluent Sampling

The pumped Area D groundwater is conveyed to the treatment system on Buffalo Color Area A, where it combines with the discharge from Area A extraction wells EW-1 and EW-2 and is pre-treated via carbon vessels. From there, the discharge is combined with the effluent from Area A extraction wells EW-3, EW-4, and EW-5 and discharged to the BSA sewer system. Monthly sampling of the effluent is completed as required by the BSA Permit and the results are provided in quarterly reports submitted to the BSA and copied to NYSDEC. Copies of the related discharge monitoring reports for the combined treatment discharge are included in Appendix A. No exceedances of the BSA Permit limits associated with the Area D effluent were observed during 2010.

## 2.1.3 Treatment Plant Performance and Maintenance

The treatment plant is operated continuously as part of the OM&M for Area A, an interim corrective measure that consists of the extraction and treatment of groundwater from Area A. Maintenance of the treatment plant includes activated carbon canister exchange, backwashing the multi-media filters, maintenance of the pH probe, and other maintenance as needed to maintain groundwater extraction from Area A. Additionally, the Area D pumps are operated as needed to maintain the required inward gradient between the outside and inside of the Area D containment wall. The Area D groundwater is treated at the treatment plant along with the groundwater originating from Area A extraction wells EW-1 and EW-2. Non-routine maintenance of Area D during the reporting period included repairs of the pump at EW-4, replacing the flow meter at EW-2, and installing multiple no trespassing signs along the railroad embankment. The discharge from the treatment plant to the BSA is currently conducted under a BSA permit that is for both Area A and Area D (i.e., the combined discharge).

## 2.2 OBSERVATION WELLS

As shown on the table below and the hydrographs in Appendix B, the water levels in the interior wells were generally between approximately one foot and 6.72 feet lower than the levels in the exterior wells during this reporting period except during January and February 2010, when the level difference fell below one foot but an inward gradient was still maintained. The data indicates that potentially impacted groundwater was not leaving the Site.

A total of approximately 233,440 gallons of groundwater was pumped from Area D during 2010 as indicated on the table below. In general, pumping occurred at each extraction well monthly as a maintenance procedure to minimize potential detrimental effects of scaling. The other reason for pumping to be initiated was if the head difference between the interior and corresponding exterior wells falls below one foot as directed by the 1999 O&M Plan.

The only time this situation occurred during 2010 was in January and February. Periodic pumping was performed until an inward two foot head differential was observed at each observation well cluster in accordance with the O&M plan.

The following table shows the flow totalizer readings and the level difference between the exterior wells (River Wells) and interior wells (Landfill Wells) as measured during 2010:

2010 Buffalo Color Area D
Post-Remedial Construction Annual Operations and Maintenance Report
MACTEC Engineering and Consulting, Inc.

Vault	EW-1	EW-2	EW-3	EW-4	Interim	Level Difference Between River Wells and Landfill Wells (ft)							
Date	Flow Totalizer Reading (gallons)				Flow (gallons)	OW-1E & OW-1I	OW-2E & OW-2I	OW-3E & OW-3I	OW-4E & OW-4I	OW-5E & OW-5I	OW-6E & OW-6I		
1/17/10	1570300	1637910	912030	1688090		0.79	0.56	0.93	0.71	0.65	0.97		
2/4/10	1571840	1637910	920510	1688090	10020	1.47	1.11	1.07	1.40	1.34	1.20		
2/24/10	1572850	1637910	926190	1693010	11610	1.09	1.06	1.20	1.02	0.97	1.18		
3/10/10	1578060	1637910	952560	1719060	57630	1.50	1.57	1.66	1.49	1.45	1.72		
3/30/10	1580190	1637910	972300	1731540	34350	2.47	2.48	2.57	2.43	2.37	2.57		
4/29/10	1582790	1637910	1000140	1745360	44260	2.99	2.96	2.22	2.59	2.55	2.29		
5/17/10	1583940	1637910	1020010	1755240	30900	3.45	2.37	1.85	1.69	1.68	2.07		
5/27/10	1584100	1637910	1021730	1756120	2760	2.92	1.84	2.34	2.21	2.19	2.28		
6/18/10	1584100	1637910	1021730	1756120	0	2.87	2.71	2.61	2.35	2.36	2.50		
7/30/10	1584160	1637910	1022470	1756530	1210	NR	NR	2.22	2.10	6.72	2.29		
8/2/10	1584160	1637910	1022470	1756530	0	2.52	2.45	2.22	2.10	6.72	2.29		
8/10/10	1584160	1637910	1022470	1756530	0	2.63	2.49	2.39	2.40	2.34	2.42		
9/15/10	1584160	1637910	1022470	1756530	0	2.00	1.81	1.81	1.78	1.71	1.70		
9/27/10	1584160	1637910	1033030	1763360	17390	2.33	2.22	2.27	2.07	1.00	2.35		
10/12/10	1584700	1637910	1036030	1765590	5770	1.65	1.50	1.49	1.36	1.38	1.48		
10/19/10	1584700	1637910	1036030	1765590	0	2.17	2.08	1.90	1.98	1.84	1.93		
11/19/10	1584880	1637910	1038600	1767310	4470	1.37	1.18	1.10	1.23	1.14	1.13		
1/2/11	1585400	1637910	1045910	1772550	13070	1.10	0.99	1.00	0.93	0.94	1.03		

Total Gallons: 233,440

NR - Indicated Data Not Recorded

## Prepared by: ESW Checked by: JAT

# 2.3 SITE INSPECTIONS

Quarterly inspections by OMI were completed on February 15, April 22, August 16, and October 27, 2010. The inspections were conducted in accordance with the Post-Remedial Construction Operation and Maintenance Plan, dated January 1999. The shoreline, wetlands, wells, drainage, gas vents, and cap were visually inspected. The completed inspection forms are included in Appendix D.

A representative of NYSDEC participated in two of the four quarterly inspections, but was unable to attend the first and third quarter inspections. These inspections indicated that the Site has a substantial vegetative cover and that the surface drainage system is in good condition. There is no evidence of sediment buildup, ponded water, or slope instability that would indicate that the drainage system is failing. The access road was also in good condition. The condition of the gates, locks, and signs were sufficient to restrict access. The integrity of the groundwater monitoring wells and extraction wells were verified during the inspections. Table 1 summarizes the results of the Site inspections, and copies of the completed inspection checklists are provided in Appendix D.

## 2.3.1 February 15, 2010 Inspection

The integrity of the cap was acceptable during the inspection. There was no evidence of litter or unauthorized dumping by trespassers. The gas venting system and erosion control riprap were in acceptable condition. It was noted that EW-2 pump appeared to be above the water level and not pumping water. Because of snow cover, OMI was unable to inspect the condition of the vegetative cover during the February 2010 inspection. The vegetative cover was inspected during subsequent inspections.

## 2.3.2 April 22, 2010 Inspection

The integrity of the cap was acceptable during the inspection. The gas venting system and erosion control riprap were in acceptable condition. There was no evidence of litter or unauthorized dumping by trespassers. During the April 2010 inspection, the NYSDEC representatives, David Szymanski and Gene Melnyk, indicated that fencing may be needed along the railroad embankment to prevent future trespassers.

## 2.3.3 August 16, 2010 Inspection

The integrity of the cap was acceptable during the inspection. The gas venting system and erosion control riprap were in acceptable condition. There was no evidence of litter or unauthorized dumping by trespassers. Animal borrows were encountered during the inspection. Personnel were contacted to trap and remove the animals and the burrows were filled in.

## 2.3.4 October 27, 2010 Inspection

The integrity of the cap was acceptable during the inspection. There was no evidence of litter or unauthorized dumping by trespassers. The gas venting system and erosion control riprap were in acceptable condition. Animal borrows were encountered during the inspection at EW-2. Trapping and removal of the animals was continued and the burrows were filled in.

## 3.0 CONCLUSIONS AND RECOMMENDATIONS

The performance of the treatment system was evaluated based on maintaining an inward hydraulic gradient across the containment wall. This performance factor has been met over the period of this report (January 1, 2010 through December 31, 2010). The following conclusions and recommendations were developed based on the data collected during this period:

- South Buffalo Development LLC (SBD) purchased the land associated with Area D along with the parcels associated with former Buffalo Color Areas A, B, C, and E in October 2008. Honeywell and SBD intend to negotiate an agreement regarding future O&M responsibilities for Area D. NYSDEC will be notified of any agreement reached between SBD and Honeywell on this matter. Until such time Honeywell will continue to provide the required O&M for Area "D".
- The cap and extraction systems are functioning as necessary to maintain the remedial goals.
- The groundwater extraction system will continue to be operated as necessary during 2011 to maintain the required inward head differential.
- Routine O&M activities should continue during 2011, with an Annual report and PRR submittal made by February 2012.

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TABLE

## Table 1

## Visual Site Evaluation Results – Buffalo Color Area D 2010

Visual Evaluation Item	Acceptable	Not Acceptable	Comments
Vegetative Cover	Х		Cover was in good condition.
Integrity of Drainage System	Х		System was in good condition.
Condition of Roads	Х		Roads were in good condition.
Integrity of Wells	Х		Pump EW-4 repaired, Pump EW-2 above water level.
Integrity of the Cap	Х		Noted animal burrows. Holes were filled and animals were trapped.
Gas Venting System	Х		System was in good condition.
Erosion Control Structures	Х		The erosion control structures were in good condition.

Created by: ESW Checked by: JMS FIGURE



ORIGINAL FROM PARSONS INFRASTRUCTURE & TECHNOLOGY GROUP	PROJECT NUMBER:	3410050346		SITE MAP
	DRAWING NUMBER:	B(01).dwg		
	DATE:	7/12/06		
	DRAWN BY:	ESW	Engineering & Consulting Inc.	BUFFALO
FILE: P:\PROJECTS\Honeywell\BuffaloNY\BuffaloColorAreaD\B(01).dwg	APPROVED BY:		Pittsburgh, PA 15106	BUFFALO,

# P VELL O COLOR AREA "D" O, NEW YORK

FIGURE

**APPENDIX A** 

DISCHARGE MONITORING REPORTS

#### Discharge Monitoring Report for January 2010

BSA Permit No.	nit No. 09-06-BU109					BBL					
Sample Date:	01/14/10				Date:	2/2/2010					
Sample Location:	Onsite Pump Station to BSA				Checked by	RTB					
				_	Date:	4/2/2010					
BSA Permit Parameter	An	Input alytical Result	5	Conv Analytica	Converted Analytical Results		BSA Daily Max Discharge Limit		MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	9.23	NA	SU	9.23	SU	5.0 - 12.0	SU	Yes			
BOD5	16.1	2.0	mg/L	16.1	mg/L	250	mg/L	Yes			
Total Phenol	0.0400	0.0100	mg/L	0.004	lbs/day	1.67	lbs/day	Yes	20	0.0400	Yes
Total Chromium	0.0065	0.0040	mg/L	0.0007	lbs/day	0.83	lbs/day	Yes	40	0.0065	Yes
Total Copper	0.0155	0.0100	mg/L	0.002	lbs/day	0.67	lbs/day	Yes	16	0.0155	Yes
Lead	0.0035	0.0050	mg/L	0.0004	lbs/day	0.541	lbs/day	Yes	65	0.0035	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes			
Total Nickel	0.0068	0.0100	mg/L	0.0007	lbs/day	1.17	lbs/day	Yes	14	0.007	Yes
Zinc	0.0196	0.0100	mg/L	0.002	lbs/day	2.046	lbs/day	Yes	25	0.0196	Yes
Amendable Cyanide	0.0653	0.0100	mg/L	0.007	lbs/day	2.59	lbs/day	Yes	6.2	0.0653	Yes
Total PCB	ND	0.059	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	1900	500	ug/L	1.9	mg/L	*	mg/L	Yes			
Max Individual Purgeables	420	2000	ug/L	0.420	mg/L	*	mg/L	Yes			
Total Suspended Solids	16.4	4.0	mg/L	16.4	mg/L	250	mg/L	Yes			
Total Phosphate**	1.46	0.0500	mg/L	1.5	mg/L	15.35	mg/L	Yes			
Total Flow (average)	8.62		gpm	12,411	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Total Flow for Period	347,510		gallons			
Total Days in Period	28					-
Final Reading	5,543,058	2,587,842	2,547,225	3,148,576	1,045,267	1/14/2010
Initial Reading	5,409,689	2,512,619	2,501,657	3,062,232	1,038,261	12/17/2009
	EW-1	EW-2	EW-3	EW-4	EW-5	_
Flow Calculations						

#### Discharge Monitoring Report for February 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	BBL					
Sample Date:	02/11/10				Date:	2/24/2010					
Sample Location:	Onsite Pump St	tation to BSA			Checked by	RTB					
					Date:	4/2/2010					
BSA Permit Parameter	An	Input alytical Result	5	Conv Analytica	Converted Analytical Results		BSA Daily Max Discharge Limit		MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	8.72	NA	SU	8.72	SU	5.0 - 12.0	SU	Yes			
BOD5	8.9	2.0	mg/L	8.9	mg/L	250	mg/L	Yes			
Total Phenol	0.0217	0.0100	mg/L	0.002	lbs/day	1.67	lbs/day	Yes	20	0.0217	Yes
Total Chromium	0.0083	0.0040	mg/L	0.001	lbs/day	0.83	lbs/day	Yes	40	0.0083	Yes
Total Copper	0.126	0.0100	mg/L	0.009	lbs/day	0.67	lbs/day	Yes	16	0.1260	Yes
Lead	0.0047	0.0050	mg/L	0.0004	lbs/day	0.541	lbs/day	Yes	65	0.0047	Yes
Total Mercury	0.0001	0.0002	mg/L	0.00001	lbs/day	0.00033	lbs/day	Yes		0.0001	
Total Nickel	0.0104	0.0100	mg/L	0.0008	lbs/day	1.17	lbs/day	Yes	14	0.010	Yes
Zinc	0.0514	0.0100	mg/L	0.004	lbs/day	2.046	lbs/day	Yes	25	0.0514	Yes
Amendable Cyanide	0.0051	0.0100	mg/L	0.0004	lbs/day	2.59	lbs/day	Yes	6.2	0.0051	Yes
Total PCB	ND	0.062	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	1200	990	ug/L	1	mg/L	*	mg/L	Yes			
Max Individual Purgeables	83	25	ug/L	0.083	mg/L	*	mg/L	Yes			
Total Suspended Solids	ND	4.0	mg/L	ND	mg/L	250	mg/L	Yes			
Total Phosphate**	0.582	0.0100	mg/L	0.6	mg/L	15.35	mg/L	Yes			
Total Flow (average)	6.26		gpm	9,020	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Total Flow for Period Average Flow for Period	252,554 6.26	4 5	gallons gpm			
Total Days in Period	28	3				
Final Reading	5,669,286	2,661,381	2,588,802	3,159,786	1,045,267	2/11/2010
Initial Reading	5,543,058	2,587,842	2,547,225	3,148,576	1,045,267	1/14/2010
	EW-1	EW-2	EW-3	EW-4	EW-5	_
Flow Calculations						

#### **Discharge Monitoring Report for** March 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	RTB					
Sample Date:	03/18/10				Date:	4/5/2010					
Sample Location:	Onsite Pump Station to BSA				Checked by BBL						
					Date:	4/13/2010					
BSA Permit Parameter	An	Input alytical Result	s	Conv Analytica	Converted Analvtical Results		BSA Daily Max Discharge Limit		MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	9.30	NA	SU	9.3	SU	5.0 - 12.0	SU	Yes			
BOD5	5.6	2.0	mg/L	5.6	mg/L	250	mg/L	Yes			
Total Phenol	0.0316	0.0100	mg/L	0.002	lbs/day	1.67	lbs/day	Yes	20	0.0316	Yes
Total Chromium	0.0071	0.0040	mg/L	0.0005	lbs/day	0.83	lbs/day	Yes	40	0.0071	Yes
Total Copper	0.0228	0.0100	mg/L	0.001	lbs/day	0.67	lbs/day	Yes	16	0.0228	Yes
Lead	0.0047	0.0050	mg/L	0.0003	lbs/day	0.541	lbs/day	Yes	65	0.0047	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes			
Total Nickel	0.0073	0.0100	mg/L	0.0005	lbs/day	1.17	lbs/day	Yes	14	0.0073	Yes
Zinc	0.0150	0.0100	mg/L	0.001	lbs/day	2.046	lbs/day	Yes	25	0.0150	Yes
Amendable Cyanide	0.0291	0.0100	mg/L	0.002	lbs/day	2.59	lbs/day	Yes	6.2	0.0291	Yes
Total PCB	ND	0.059	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	8700	5000	ug/L	8.700	mg/L	*	mg/L	Yes			
Max Individual Purgeables	60	25	ug/L	0.060	mg/L	*	mg/L	Yes			
Total Suspended Solids	8.0	4.0	mg/L	8.0	mg/L	250	mg/L	Yes			
Total Phosphate**	0.806	0.0500	mg/L	0.806	mg/L	15.35	mg/L	Yes			
Total Flow (average)	5.47		gpm	7,877	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E MAID - Maximum Allowable Instantaneous Discharge

Average Flow for Period	275,700 5.47	,	galions			
Total Flow for Pariod	275 700		gallana			
Total Days in Period	35	5				
Final Reading	5,809,230	2,748,978	2,634,068	3,162,679	1,045,267	3/18/2010
Initial Reading	5,669,286	2,661,381	2,588,802	3,159,786	1,045,267	2/11/2010
	EW-1	EW-2	EW-3	EW-4	EW-5	
Flow Calculations						

#### Discharge Monitoring Report for April 2010

BSA Permit No.	09-06-BU109			]	Prepared by:	BBL					
Sample Date:	04/23/10				Date:	5/12/2010					
Sample Location:	Onsite Pump S	tation to BSA			Checked by	RTB					
				_	Date:	7/14/2010					
BSA Permit Parameter	An	Input alytical Result	5	Conv Analytica	erted I Results	BSA Daily Max Discharge Limit		Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	9.04	NA	SU	9.04	SU	5.0 - 12.0	SU	Yes			
BOD5	8.5	2.0	mg/L	8.5	mg/L	250	mg/L	Yes			
Total Phenol	0.0377	0.0100	mg/L	0.003	lbs/day	1.67	lbs/day	Yes	20	0.0377	Yes
Total Chromium	0.0050	0.0040	mg/L	0.0004	lbs/day	0.83	lbs/day	Yes	40	0.0050	Yes
Total Copper	0.0274	0.0100	mg/L	0.002	lbs/day	0.67	lbs/day	Yes	16	0.0274	Yes
Lead	ND	0.0050	mg/L	ND	lbs/day	0.541	lbs/day	Yes	65	ND	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0078	0.0100	mg/L	0.0007	lbs/day	1.17	lbs/day	Yes	14	0.008	Yes
Zinc	0.0133	0.0100	mg/L	0.001	lbs/day	2.046	lbs/day	Yes	25	0.0133	Yes
Amendable Cyanide	0.0364	0.0100	mg/L	0.003	lbs/day	2.59	lbs/day	Yes	6.2	0.0364	Yes
Total PCB	ND	0.057	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	5900	990	ug/L	5.900	mg/L	*	mg/L	Yes			
Max Individual Purgeables	77	25	ug/L	0.077	mg/L	*	mg/L	Yes			
Total Suspended Solids	77.6	4.0	mg/L	77.6	mg/L	250	mg/L	Yes			
Total Phosphate**	0.128	0.0100	mg/L	0.128	mg/L	15.35	mg/L	Yes			
Total Flow (average)	7.19		gpm	10,351	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations						
	EW-1	EW-2	EW-3	EW-4	EW-5	
Initial Reading	5,809,230	2,748,978	2,634,068	3,162,679	1,045,267	3/18/2010
Final Reading	5,944,193	2,843,839	2,685,783	3,253,787	1,045,267	4/23/2010
Total Days in Period	36	6				
Total Flow for Period Average Flow for Period	372,647 7.19	, )	gallons gpm			

#### **Discharge Monitoring Report for** May 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	BBL					
Sample Date:	05/03/10				Date:	5/12/2010					
Sample Location:	Onsite Pump St	ation to BSA			Checked by	RTB					
				<u>-</u>	Date:	7/14/2010					
BSA Permit Parameter	Input Analytical Results			Conv Analytica	Converted Analytical Results		BSA Daily Max Discharge Limit		MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	8.71	NA	SU	8.71	SU	5.0 - 12.0	SU	Yes			
BOD5	8.9	2.0	mg/L	8.9	mg/L	250	mg/L	Yes			
Total Phenol	0.0220	0.0100	mg/L	0.002	lbs/day	1.67	lbs/day	Yes	20	0.0220	Yes
Total Chromium	0.0056	0.0040	mg/L	0.0005	lbs/day	0.83	lbs/day	Yes	40	0.0056	Yes
Total Copper	0.0147	0.0100	mg/L	0.001	lbs/day	0.67	lbs/day	Yes	16	0.0147	Yes
Lead	ND	0.0050	mg/L	ND	lbs/day	0.541	lbs/day	Yes	65	ND	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0046	0.0100	mg/L	0.0004	lbs/day	1.17	lbs/day	Yes	14	0.005	Yes
Zinc	0.0098	0.0100	mg/L	0.001	lbs/day	2.046	lbs/day	Yes	25	0.0098	Yes
Amendable Cyanide	0.0635	0.0100	mg/L	0.0052	lbs/day	2.59	lbs/day	Yes	6.2	0.0635	Yes
Total PCB	ND	0.059	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	1600	390	ug/L	1.600	mg/L	*	mg/L	Yes			
Max Individual Purgeables	50	25	ug/L	0.050	mg/L	*	mg/L	Yes			
Total Suspended Solids	ND	4.0	mg/L	ND	mg/L	250	mg/L	Yes			
Total Phosphate**	0.529	0.0100	mg/L	0.529	mg/L	15.35	mg/L	Yes			
Total Flow (average)	6.81		gpm	9,800	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E MAID - Maximum Allowable Instantaneous Discharge

Average Flow for Period	6.81		gpm			
Total Flow for Period	98,000	)	gallons			
Total Days in Period	10	)				•
Final Reading	5,983,790	2,878,966	2,699,968	3,262,878	1,045,267	5/3/2010
Initial Reading	5,944,193	2,843,839	2,685,783	3,253,787	1,045,267	4/23/2010
	EW-1	EW-2	EW-3	EW-4	EW-5	_
Flow Calculations						

#### **Discharge Monitoring Report for** June 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	BBL					
Sample Date:	06/28/10				Date:	7/13/2010					
Sample Location:	Onsite Pump St	tation to BSA			Checked by	RTB					
					Date:	7/14/2010					
BSA Permit Parameter	Input Analytical Results			Conv Analytica	verted al Results	BSA Daily Max Discharge Limit		Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L mg/L	
рН	9.00	NA	SU	9.0	SU	5.0 - 12.0	SU	Yes			
BOD5	33.8	2.0	mg/L	33.8	mg/L	250	mg/L	Yes			
Total Phenol	0.0561	0.0100	mg/L	0.002	lbs/day	1.67	lbs/day	Yes	20	0.0561	Yes
Total Chromium	0.0075	0.0040	mg/L	0.0002	lbs/day	0.83	lbs/day	Yes	40	0.0075	Yes
Total Copper	0.0053	0.0100	mg/L	0.0002	lbs/day	0.67	lbs/day	Yes	16	0.0053	Yes
Lead	ND	0.0050	mg/L	ND	lbs/day	0.541	lbs/day	Yes	65	ND	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes			
Total Nickel	0.0042	0.0100	mg/L	0.0001	lbs/day	1.17	lbs/day	Yes	14	0.0042	Yes
Zinc	0.0161	0.0100	mg/L	0.0005	lbs/day	2.046	lbs/day	Yes	25	0.0161	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.059	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	6500	2100	ug/L	6.500	mg/L	*	mg/L	Yes			
Max Individual Purgeables	28	25	ug/L	0.028	mg/L	*	mg/L	Yes			
Total Suspended Solids	97.2	4.0	mg/L	97.2	mg/L	250	mg/L	Yes			
Total Phosphate**	0.716	0.0100	mg/L	0.716	mg/L	15.35	mg/L	Yes			
Total Flow (average)	2.44		gpm	3,514	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E MAID - Maximum Allowable Instantaneous Discharge

Total Flow for Period Average Flow for Period	196,790 2.44	) 1	gallons gpm			
Total Days in Period	56	3				
Final Reading	6,048,852	2,971,042	2,725,094	3,273,649	1,049,022	6/28/2010
Initial Reading	5,983,790	2,878,966	2,699,968	3,262,878	1,045,267	5/3/2010
	EW-1	EW-2	EW-3	EW-4	EW-5	_
Flow Calculations						

#### Discharge Monitoring Report for July 2010

BSA Permit No.	09-06-BU109			]	Prepared by:	BBL					
Sample Date:	07/28/10				Date:	8/11/2010					
Sample Location:	Onsite Pump S	tation to BSA		J	Checked by	RTB					
					Date:	10/7/2010					
BSA Permit Parameter	An	Input alytical Result	s	Conv Analytica	erted I Results	BSA Daily Max Discharge Limit		Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	-
рН	8.97	NA	SU	8.97	SU	5.0 - 12.0	SU	Yes			
BOD5	25.3	2.0	mg/L	25.3	mg/L	250	mg/L	Yes			
Total Phenol	0.104	0.0100	mg/L	0.011	lbs/day	1.67	lbs/day	Yes	20	0.1040	Yes
Total Chromium	0.0086	0.0040	mg/L	0.0009	lbs/day	0.83	lbs/day	Yes	40	0.0086	Yes
Total Copper	0.0073	0.0100	mg/L	0.001	lbs/day	0.67	lbs/day	Yes	16	0.0073	Yes
Lead	0.0043	0.0050	mg/L	0.0005	lbs/day	0.541	lbs/day	Yes	65	0.0043	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0050	0.0100	mg/L	0.0005	lbs/day	1.17	lbs/day	Yes	14	0.005	Yes
Zinc	0.0168	0.0100	mg/L	0.002	lbs/day	2.046	lbs/day	Yes	25	0.0168	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.057	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	2700	380	ug/L	2.700	mg/L	*	mg/L	Yes			
Max Individual Purgeables	59	25	ug/L	0.059	mg/L	*	mg/L	Yes			
Total Suspended Solids	235	4.0	mg/L	235.0	mg/L	250	mg/L	Yes			
Total Phosphate**	1.18	0.0500	mg/L	1.180	mg/L	15.35	mg/L	Yes			
Total Flow (average)	8.90		gpm	12,820	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations						
	EW-1	EW-2	EW-3	EW-4	EW-5	
Initial Reading	6,048,852	2,971,042	2,725,094	3,273,649	1,049,022	6/28/2010
Final Reading	6,206,844	3,044,189	2,765,325	3,338,700	1,095,992	7/28/2010
Total Days in Period	30		-			1
Estimate Area D Contribution	1,210		gallons			
Total Flow for Period	384,601		gallons			
Average Flow for Period	8.90		gpm			

#### Discharge Monitoring Report for August 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	BBL					
Sample Date:	08/24/10				Date:	9/23/2010					
Sample Location:	Onsite Pump S	tation to BSA			Checked by	RTB					
					Date:	10/7/2010					
DCA Dormit Doromotor	Angl	Input	_	Con	verted	BSA Da	ily Max	Permit	MAID	Quantity	Permit
BSA Permit Parameter	Anar	prical Result	5	Analytic	al Results	Dischar		Compliance		Quantity	Compliance
	Quantity	Limit	Unit	Quantity	Unit	Quantity	Unit		mg/∟	mg/∟	
рН	9.27	NA	SU	9.27	SU	5.0 - 12.0	SU	Yes			
BOD5	13.8	2.0	mg/L	13.8	mg/L	250	mg/L	Yes			
Total Phenol	0.147	0.0100	mg/L	0.014	lbs/day	1.67	lbs/day	Yes	20	0.1470	Yes
Total Chromium	0.0087	0.0040	mg/L	0.0008	lbs/day	0.83	lbs/day	Yes	40	0.0087	Yes
Total Copper	0.0152	0.0100	mg/L	0.001	lbs/day	0.67	lbs/day	Yes	16	0.0152	Yes
Lead	0.0085	0.0050	mg/L	0.0008	lbs/day	0.541	lbs/day	Yes	65	0.0085	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0048	0.0100	mg/L	0.0004	lbs/day	1.17	lbs/day	Yes	14	0.005	Yes
Zinc	0.0275	0.0100	mg/L	0.003	lbs/day	2.046	lbs/day	Yes	25	0.0275	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.057	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	3700	950	ug/L	3.700	mg/L	*	mg/L	Yes			
Max Individual Purgeables	110	25	ug/L	0.110	mg/L	*	mg/L	Yes			
Total Suspended Solids	146	4.0	mg/L	146.0	mg/L	250	mg/L	Yes			
Total Phosphate**	0.911	0.0100	mg/L	0.911	mg/L	15.35	mg/L	Yes			
Total Flow (average)	7.69		gpm	11,073	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations	0	
Combined Effluent No. 1 and No.	. 2 Flow Totals (gallons	s)
Initial Reading	164,964	7/28/2010
Final Reading	463,931	8/24/2010
Total Days in Period	27	
Total Flow for Period	298,967	gallons
Average Flow for Period	7.69	gpm

#### Discharge Monitoring Report for September 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	RTB					
Sample Date:	09/23/10				Date:	10/13/2010					
Sample Location:	Onsite Pump St	tation to BSA			Checked by	BPN					
				_	Date:	10/14/2010					
BSA Permit Parameter	Input Analvtical Results			Conv Analytica	/erted al Results	BSA Daily Max Discharge Limit		Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	-
рН	8.69	NA	SU	8.7	SU	5.0 - 12.0	SU	Yes			
BOD5	19.7	2.0	mg/L	19.7	mg/L	250	mg/L	Yes			
Total Phenol	0.0668	0.0100	mg/L	0.006	lbs/day	1.67	lbs/day	Yes	20	0.0668	Yes
Total Chromium	0.0087	0.0040	mg/L	0.0008	lbs/day	0.83	lbs/day	Yes	40	0.0087	Yes
Total Copper	0.0053	0.0100	mg/L	0.0005	lbs/day	0.67	lbs/day	Yes	16	0.0053	Yes
Lead	0.0065	0.0050	mg/L	0.0006	lbs/day	0.541	lbs/day	Yes	65	0.0065	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes			
Total Nickel	0.0040	0.0100	mg/L	0.0004	lbs/day	1.17	lbs/day	Yes	14	0.0040	Yes
Zinc	0.0131	0.0100	mg/L	0.0012	lbs/day	2.046	lbs/day	Yes	25	0.0131	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.058	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	6900	5000	ug/L	6.900	mg/L	*	mg/L	Yes			
Max Individual Purgeables	84	25	ug/L	0.084	mg/L	*	mg/L	Yes			
Total Suspended Solids	156.0	4.0	mg/L	156.0	mg/L	250	mg/L	Yes			
Total Phosphate**	0.996	0.1000	mg/L	0.996	mg/L	15.35	mg/L	Yes			
Total Flow (average)	7.77		gpm	11,187	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations		
Combined Effluent No. 1 and No.	2 Flow Totals (gallons)	
Initial Reading	463,931	8/24/2010
Final Reading	799,542	9/23/2010
Total Days in Period	30	
Total Flow for Period	335,611	gallons
Average Flow for Period	7.77	gpm

#### Discharge Monitoring Report for October 2010

BSA Permit No.	09-06-BU109			]	Prepared by:	BBL					
Sample Date:	10/14/10				Date:	10/27/2010					
Sample Location:	Onsite Pump S	tation to BSA			Checked by	RTB					
				_	Date:	1/4/2011					
BSA Permit Parameter	An	Input alytical Results	6	Conv Analytica	erted I Results	BSA Da Dischar	ily Max ge Limit	Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	8.62	NA	SU	8.62	SU	5.0 - 12.0	SU	Yes			
BOD5	17.9	2.0	mg/L	17.9	mg/L	250	mg/L	Yes			
Total Phenol	0.0438	0.0100	mg/L	0.004	lbs/day	1.67	lbs/day	Yes	20	0.0438	Yes
Total Chromium	0.0067	0.0040	mg/L	0.0007	lbs/day	0.83	lbs/day	Yes	40	0.0067	Yes
Total Copper	0.0020	0.0100	mg/L	0.000	lbs/day	0.67	lbs/day	Yes	16	0.0020	Yes
Lead	ND	0.0050	mg/L	ND	lbs/day	0.541	lbs/day	Yes	65	ND	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0030	0.0100	mg/L	0.0003	lbs/day	1.17	lbs/day	Yes	14	0.003	Yes
Zinc	0.0112	0.0100	mg/L	0.001	lbs/day	2.046	lbs/day	Yes	25	0.0112	Yes
Amendable Cyanide	0.0345	0.0100	mg/L	0.003	lbs/day	2.59	lbs/day	Yes	6.2	0.0345	Yes
Total PCB	ND	0.058	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	4000	990	ug/L	4.000	mg/L	*	mg/L	Yes			
Max Individual Purgeables	93	25	ug/L	0.093	mg/L	*	mg/L	Yes			
Total Suspended Solids	112	4.0	mg/L	112.0	mg/L	250	mg/L	Yes			
Total Phosphate**	0.918	0.0100	mg/L	0.918	mg/L	15.35	mg/L	Yes			
Total Flow (average)	8.38		gpm	12,074	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations		
Combined Effluent No. 1 and No.	2 Flow Totals (gallons)	
Initial Reading	799,542	9/23/2010
Final Reading	1,053,100	10/14/2010
Total Days in Period	21	
Total Flow for Period	253,558	gallons
Average Flow for Period	8.38	gpm

# Discharge Monitoring Report for November 2010

BSA Permit No.	09-06-BU109			]	Prepared by:	BBL					
Sample Date:	11/18/10				Date:	11/29/2010					
Sample Location:	Onsite Pump S	tation to BSA			Checked by	RTB					
					Date:	1/4/2011					
BSA Permit Parameter	Ana	Input vtical Result	s	Conv Analytic	verted al Results	BSA Da Dischar	nily Max de Limit	Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	8.71	NA	SU	8.71	SU	5.0 - 12.0	SU	Yes			
BOD5	25.3	2.0	mg/L	25.3	mg/L	250	mg/L	Yes			
Total Phenol	0.0434	0.0100	mg/L	0.004	lbs/day	1.67	lbs/day	Yes	20	0.0434	Yes
Total Chromium	0.0091	0.0040	mg/L	0.0009	lbs/day	0.83	lbs/day	Yes	40	0.0091	Yes
Total Copper	0.0047	0.0100	mg/L	0.000	lbs/day	0.67	lbs/day	Yes	16	0.0047	Yes
Lead	0.0061	0.0050	mg/L	0.0006	lbs/day	0.541	lbs/day	Yes	65	0.0061	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0038	0.0100	mg/L	0.0004	lbs/day	1.17	lbs/day	Yes	14	0.004	Yes
Zinc	0.0148	0.0100	mg/L	0.001	lbs/day	2.046	lbs/day	Yes	25	0.0148	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.062	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	6000	2000	ug/L	6.000	mg/L	*	mg/L	Yes			
Max Individual Purgeables	120	25	ug/L	0.120	mg/L	*	mg/L	Yes			
Total Suspended Solids	156	4.0	mg/L	156.0	mg/L	250	mg/L	Yes			
Total Phosphate**	1.38	0.100	mg/L	1.380	mg/L	15.35	mg/L	Yes			
Total Flow (average)	8.04		gpm	11,581	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L. \*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations		
Combined Effluent No. 1 and No.	2 Flow Totals (gal	lons)
Initial Reading	1,053,100	10/14/2010
Final Reading	1,458,436	11/18/2010
Total Days in Period	35	
Total Flow for Period	405,336	gallons
Average Flow for Period	8.04	gpm

#### Discharge Monitoring Report for December 2010

BSA Permit No.	09-06-BU109			1	Prepared by:	BBL					
Sample Date:	12/21/10				Date:	1/4/2011					
Sample Location:	Onsite Pump Si	tation to BSA			Checked by	RTB					
				_	Date:	1/4/2011					
BSA Permit Parameter	An	Input alytical Result	5	Conv Analytica	verted al Results	BSA Da Dischar	aily Max ge Limit	Permit Compliance	MAID	Quantity	Permit Compliance
	Quantity	Reporting Limit	Unit	Quantity	Unit	Quantity	Unit		mg/L	mg/L	
рН	8.19	NA	SU	8.2	SU	5.0 - 12.0	SU	Yes			
BOD5	10.7	2.0	mg/L	10.7	mg/L	250	mg/L	Yes			
Total Phenol	0.0198	0.0100	mg/L	0.001	lbs/day	1.67	lbs/day	Yes	20	0.0198	Yes
Total Chromium	0.0058	0.0040	mg/L	0.0004	lbs/day	0.83	lbs/day	Yes	40	0.0058	Yes
Total Copper	0.0069	0.0100	mg/L	0.0005	lbs/day	0.67	lbs/day	Yes	16	0.0069	Yes
Lead	ND	0.0050	mg/L	ND	lbs/day	0.541	lbs/day	Yes	65	ND	Yes
Total Mercury	ND	0.0002	mg/L	ND	lbs/day	0.00033	lbs/day	Yes		ND	
Total Nickel	0.0070	0.0100	mg/L	0.0005	lbs/day	1.17	lbs/day	Yes	14	0.0070	Yes
Zinc	0.0120	0.0100	mg/L	0.0008	lbs/day	2.046	lbs/day	Yes	25	0.0120	Yes
Amendable Cyanide	ND	0.0100	mg/L	ND	lbs/day	2.59	lbs/day	Yes	6.2	ND	Yes
Total PCB	ND	0.058	ug/L	ND	lbs/day	0.0001	lbs/day	Yes	0.002	ND	Yes
Aniline or Aniline Derivative	1800	390	ug/L	1.800	mg/L	*	mg/L	Yes			
Max Individual Purgeables	82	25	ug/L	0.082	mg/L	*	mg/L	Yes			
Total Suspended Solids	75.6	4.0	mg/L	75.6	mg/L	250	mg/L	Yes			
Total Phosphate**	0.279	0.0500	mg/L	0.279	mg/L	15.35	mg/L	Yes			
Total Flow (average)	5.62		gpm	8,096	gpd	50,000	gpd	Yes			

\*Permit requires reporting of Aniline or Aniline Derivative and Max Individual Purgeables concentrations in excess of 0.01 mg/L.

\*\*Analyzed by total phosphorus method SM 4500-P E

Flow Calculations		
Combined Effluent No. 1 and No	b. 2 Flow Totals (gallons)	
Initial Reading	1,458,436	11/18/2010
Final Reading	1,725,599	12/21/2010
Total Days in Period	33	
Total Flow for Period	267,163	gallons
Average Flow for Period	5.62	gpm

## **APPENDIX B**

## OBSERVATION WELL HYDROGRAPHS AND WATER LEVEL DATA













#### Buffalo Color - Monitoring Well Levels and Totalizer Readings - 2010

# Landfill Monitoring Well - Groundwater Elevation (MSL) (ft) Well Pt Elev. 17-Jan 4-Feb 24-Feb 10-Mar 30-Mar 29-Apr 17-May 27-May 18-Jun 30-Jul 2-Aug 10-Apr 15-Sep 27-Sep 12-Oct 19-Oct 19-Nov 2-Jan 0W-11 587.80 570.4 570.0 569.6 569.3 569.6 569.6 569.7 569.7 569.8 569.6 569.7 569.8

OW-3I	588.38	570.2	570.2	569.9	569.3	569.2	570.0	570.0	570.0	569.8	569.8	569.8	569.9	569.8	569.5	569.7	569.9	570.0	569.8
OW-4I	588.10	570.4	569.9	570.0	569.5	569.3	569.6	570.1	570.1	569.9	569.9	569.9	570.0	569.9	569.8	569.8	569.9	569.9	569.9
OW-5I	588.11	570.5	570.0	570.1	569.5	569.4	569.7	570.1	570.1	570.0	565.4	565.4	570.0	569.9	569.8	569.8	570.0	570.0	569.9
OW-6I	589.60	570.2	570.2	569.9	569.4	569.3	570.0	569.9	570.0	569.9	569.9	569.9	569.9	569.9	569.4	569.7	569.9	570.0	569.8

#### Landfill Monitoring Well - Distance Between Water Level and Top of Well Casing (ft)

Well	Pt Elev.	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	30-Jul	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	2-Jan
OW-1I	587.80	17.4	17.8	17.8	18.2	18.4	18.5	19.3	18.2	18.2	18.1	18.1	18.1	18.1	18.2	18.2	18.1	18.0	18.1
OW-2I	588.37	17.8	18.2	18.4	19.0	19.1	19.1	18.9	17.8	18.7	18.6	18.6	18.6	18.6	18.8	18.7	18.6	18.5	18.6
OW-3I	588.38	18.2	18.2	18.5	19.1	19.2	18.3	18.4	18.4	18.5	18.6	18.6	18.5	18.6	18.9	18.7	18.5	18.4	18.6
OW-4I	588.10	17.7	18.2	18.1	18.6	18.8	18.5	18.0	18.0	18.2	18.2	18.2	18.2	18.2	18.3	18.3	18.2	18.2	18.2
OW-5I	588.11	17.6	18.1	18.0	18.6	18.7	18.4	18.0	18.0	18.1	22.8	22.8	18.1	18.2	18.3	18.3	18.1	18.1	18.2
OW-6I	589.60	19.4	19.4	19.8	20.3	20.4	19.6	19.7	19.6	19.7	19.7	19.7	19.7	19.7	20.2	19.9	19.7	19.6	19.8

#### River Monitoring Well - Groundwater Elevation (MSL) (ft)

Well	Pt Elev.	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	30-Jul	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	2-Jan
OW-1E	583.20	571.21	571.51	571.14	571.10	571.85	572.29	571.93	572.50	572.50	565.42	572.23	572.37	571.73	571.90	571.25	571.90	571.20	570.80
OW-2E	583.05	571.09	571.25	571.07	570.98	571.75	572.23	571.83	572.39	572.41	567.45	572.19	572.27	571.62	571.80	571.17	571.85	571.05	570.75
OW-3E	582.68	571.12	571.25	571.06	570.97	571.75	572.26	571.85	572.35	572.45	572.04	572.04	572.30	571.64	571.78	571.17	571.78	571.08	570.78
OW-4E	582.93	571.10	571.32	571.02	570.95	571.77	572.23	571.78	572.28	572.27	571.98	571.98	572.35	571.69	571.83	571.16	571.88	571.13	570.83
OW-5E	582.65	571.14	571.33	571.04	570.96	571.75	572.28	571.82	572.30	572.35	572.08	572.08	572.34	571.64	570.79	571.19	571.85	571.15	570.85
OW-6E	583.23	571.19	571.44	571.03	571.07	571.82	572.26	571.96	572.32	572.41	572.15	572.15	572.36	571.57	571.72	571.18	571.83	571.13	570.83

#### River Monitoring Well - Distance Between Water Level and Top of Well Casing (ft)

Well	Pt Elev.	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	30-Jul	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	2-Jan
OW-1E	583.20	12.0	11.7	12.1	12.1	11.4	10.9	11.3	10.7	10.7	17.8	11.0	10.8	11.5	11.3	12.0	11.3	12.0	12.4
OW-2E	583.05	12.0	11.8	12.0	12.1	11.3	10.8	11.2	10.7	10.6	15.6	10.9	10.8	11.4	11.3	11.9	11.2	12.0	12.3
OW-3E	582.68	11.6	11.4	11.6	11.7	10.9	10.4	10.8	10.3	10.2	10.6	10.6	10.4	11.0	10.9	11.5	10.9	11.6	11.9
OW-4E	582.93	11.8	11.6	11.9	12.0	11.2	10.7	11.2	10.7	10.7	11.0	11.0	10.6	11.2	11.1	11.8	11.1	11.8	12.1
OW-5E	582.65	11.5	11.3	11.6	11.7	10.9	10.4	10.8	10.4	10.3	10.6	10.6	10.3	11.0	11.9	11.5	10.8	11.5	11.8
OW-6E	583.23	12.0	11.8	12.2	12.2	11.4	11.0	11.3	10.9	10.8	11.1	11.1	10.9	11.7	11.5	12.1	11.4	12.1	12.4

#### Flow Totalizer Readings (gal)

Vault	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	30-Jul	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	2-Jan
EW-1	1570300	1571840	1572850	1578060	1580190	1582790	1583940	1584100	1584100	1584160		1584160	1584160	1584610	1584700	1584700	1584880	1585400
EW-2	1637910	1637910	1637910	1637910	1637910	1637910	1637910	1637910	1637910	1637910		1637910	1637910	1637910	1637910	1637910	1637910	1637910
EW-3	912030	920510	926190	952560	972300	1000140	1020010	1021730	1021730	1022470		1022470	1022470	1033030	1036030	1036030	1038600	1045910
EW-4	1688090	1688090	1693010	1719060	1731540	1745360	1755240	1756120	1756120	1756530		1756530	1756530	1763360	1765590	1765590	1767310	1772550

#### Water Level Difference Between River Wells and Landfill Wells (ft)

Wells	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	30-Jul	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	2-Jan
OW-1E & OW-1I	0.79	1.47	1.09	1.50	2.47	2.99	3.45	2.92	2.87	NR	2.52	2.63	2.00	2.33	1.65	2.17	1.37	1.10
OW-2E & OW-2I	0.56	1.11	1.06	1.57	2.48	2.96	2.37	1.84	2.71	NR	2.45	2.49	1.81	2.22	1.50	2.08	1.18	0.99
OW-3E & OW-3I	0.93	1.07	1.20	1.66	2.57	2.22	1.85	2.34	2.61	2.22	2.22	2.39	1.81	2.27	1.49	1.90	1.10	1.00
OW-4E & OW-4I	0.71	1.40	1.02	1.49	2.43	2.59	1.69	2.21	2.35	2.10	2.10	2.40	1.78	2.07	1.36	1.98	1.23	0.93
OW-5E & OW-5I	0.65	1.34	0.97	1.45	2.37	2.55	1.68	2.19	2.36	6.72	6.72	2.34	1.71	1.00	1.38	1.84	1.14	0.94
OW-6E & OW-6I	0.97	1.20	1.18	1.72	2.57	2.29	2.07	2.28	2.50	2.29	2.29	2.42	1.70	2.35	1.48	1.93	1.13	1.03
Averag	e 0.77	1.26	1.09	1.56	2.48	2.60	2.18	2.30	2.57	3.33	3.05	2.44	1.80	2.04	1.48	1.98	1.19	1.00

NR - Water levels Not Recorded

Created By: ESW

Checked By: JAT

**APPENDIX C** 

GROUNDWATER GRADIENT ACROSS CONTAINMENT WALL

#### Appendix C Area D 2010 Post-Remedial Construction Operations and Maintenance Report Former Buffalo Color Facility, Buffalo, NY

Water Level Difference Between River Wells and Observation Wells (ft)

Wells	17-Jan	4-Feb	24-Feb	10-Mar	30-Mar	29-Apr	17-May	27-May	18-Jun	2-Aug	10-Aug	15-Sep	27-Sep	12-Oct	19-Oct	19-Nov	Average
(OW-1E) - (OW-1I)	0.79	1.47	1.09	1.50	2.47	2.99	3.45	2.92	2.87	2.52	2.63	2.00	2.33	1.65	2.17	1.37	2.14
(OW-2E) - (OW-2I)	0.56	1.11	1.06	1.57	2.48	2.96	2.37	1.84	2.71	2.45	2.49	1.81	2.22	1.50	2.08	1.18	1.90
(OW-3E) - (OW-3I)	0.93	1.07	1.20	1.66	2.57	2.22	1.85	2.34	2.61	2.22	2.39	1.81	2.27	1.49	1.90	1.10	1.99
(OW-4E) - (OW-4I)	0.71	1.40	1.02	1.49	2.43	2.59	1.69	2.21	2.35	2.10	2.40	1.78	2.07	1.36	1.98	1.23	1.93
(OW-5E) - (OW-5I)	0.65	1.34	0.97	1.45	2.37	2.55	1.68	2.19	2.36	6.72	2.34	1.71	1.00	1.38	1.84	1.14	2.40
(OW-6E) - (OW-6I)	0.97	1.20	1.18	1.72	2.57	2.29	2.07	2.28	2.50	2.29	2.42	1.70	2.35	1.48	1.93	1.13	2.02
Average	0.77	1.26	1.09	1.56	2.48	2.60	2.18	2.30	2.57	3.05	2.44	1.80	2.04	1.48	1.98	1.19	

Grad	ient
Maximum	6.72
Minimum	0.56
Average	2.06

Created By: RB Checked By: ESW

## APPENDIX D

## SITE INSPECTIONS

## Site Inspection Form

Weather: 23 F

Assessment by: Scott Sayles



Date:	02/15/1	0	
Yes			A. Security         1. Does fence exist?         2. Is there a breach in fence?         3. Locks on gate?         4. Posted signs?         5. Signs of trespassers/vandalism?         6. Other
	$\boxtimes \Box \boxtimes$		B. General Site Conditions         1. Vegetation stress?         2. Mowing required?         3. Access road drivable?         4. Odors?         5. Other
	$\boxtimes \boxtimes $		C. Cap Inspection         1. Exposed waste?         2. Side slope stable?         3. Erosion?         3. Erosion?         4. Leachate seeps (discolored vegetation)?         5. Synthetic liner exposed?         6. Bare spots?         7. Presence of burrowing animals?         8. Deep rooted vegetation?         9. Cracking?         10. Ponding water?         11. Evidence of methane seeps?         12. Other
			D. Surface Water         1. Obstruction of flow ditches?         2. Erosion of ditches?         3. Silt & erosion control?         4. Culverts in good condition?         5. Evidence of overflow or uncontrolled flow?         6. Outfalls in good condition?         7. Sedimentation basin/ponds secure?         8. Other
$\boxtimes$			E. Methane Gas Control 1. Does one exist?

Site Name: Buffalo Color Area D

Project Number: 30074

		CH2MHILL
		Site Inspection Form
Yes		<ol> <li>Is system active or passive?</li></ol>
$\boxtimes$		F. Leachate Collection System 1. Does one exist?
	$\boxtimes \Box \boxtimes \boxtimes$	<ul> <li>2. Collection method:</li> <li>a. Sump?</li> <li>b. Well point? <u>4 extraction wells</u></li> <li>c. Earthen basin/pond?</li> <li>d. Structure secured?</li> <li>e. Other</li> </ul>
$\boxtimes$		<ol> <li>Pumping system:         <ul> <li>a. Automatic?</li> <li>b. Manual? <u>can be operated manually</u></li> <li>c. Mechanically operable?</li> <li>d. Leaks/failures? <u>EW-2 pump appears to be above the water level.</u></li> </ul> </li> </ol>
		<ul> <li>a. Onsite pretreatment/treatment? <u>Water is treated in Plant (Area A).</u></li> <li>b. Surface discharge? (NPDES/SPDES)</li> <li>c. POTW – hardpiped?</li> <li>d. Quick disconnect caps in place?</li> </ul>
		<ul> <li>5. Transportation (if any):</li> <li>a. Chemicals?</li> <li>b. Filter cake?</li> <li>6. Ancillary equipment in good condition? (Pipes, valves, pumps, vaults,</li> </ul>
$\boxtimes$		7. Monitoring reports current? 8. Other
$\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$		<ul> <li>G. Groundwater Monitoring &amp; Recovery Wells (if any)</li> <li>1. Locks on wells?</li> <li>2. Wells in good condition?</li> <li>3. Well seals in good condition?</li> <li>4. Access to wells?</li> <li>5. Monitoring reports current?</li> <li>6. Other</li> </ul>



$\mathbb{N} \boxtimes \boxtimes$
$\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$
$\boxtimes$
$\boxtimes$

## Site Inspection Form

H. Treatment Plant

- 1. Building in good condition? (Doors, windows, wells, roof) \_\_\_\_\_
- 2. Visual tank inspection performed?
- Visual inspection of pipes, valves, fittings etc.?
- 4. Pump operation/inspection performed? \_\_\_\_\_
- 5. Instruments operation/calibration?
- 6. Mixer operation/inspection?
- 7. Proper personal protection equipment? \_\_\_\_
- 8. Air compressor system functioning properly? \_\_\_\_\_
- 9. Filter press inspected?
- 10. Emergency generator functioning properly?

#### I. Polymeric Marine Mattress (PMM)

- 1. Damage due to burrowing animals?
- Damage due ice and/or ice flowages?
- 3. Impacts or damage due to the periodic dredging of the Buffalo River?
- 4. Impacts or damage due to navigation activities in the Buffalo River?
- 5. Establishment of woody plant growth causing displacement or stress on the system? \_\_\_\_\_
- 6. Areas of settlement or displacement of the system?
- Erosion at the upstream and downstream limits of the system?
- 8. Damage to the stone infill adjacent to Outfall #006 and the concrete wall/sheet pile along the upstream limit of the system?
- 9. Damage to the stone infill within the marine mattresses?
- 10. Damage to the general integrity of the system (Look for splits, cuts and gaps)?

#### J. General Comments

All areas covered with snow with no visible vegetation. NYDEC could not attend. I spoke with Gene Melnyk, NYDEC, on 03/12/2010.

South Aayle 2/15/10

# 

# Site Inspection Form

Site Na Projec Date:	ame: <u>Buf</u> t Numbe <u>04/22/2(</u>	<u>falo Color Area D</u> r: <u>30074</u> 010	Weather: 50 F and Sunny Assessment by: Scott Sayles
Yes			A. Security         1. Does fence exist?         2. Is there a breach in fence?         3. Locks on gate?         4. Posted signs?         5. Signs of trespassers/vandalism?         6. Other
	$\boxtimes$		B. General Site Conditions         1. Vegetation stress?         2. Mowing required?         3. Access road drivable?         4. Odors?         5. Other
	$\boxtimes \boxtimes $		C. Cap Inspection         1. Exposed waste?         2. Side slope stable?         3. Erosion?         4. Leachate seeps (discolored vegetation)?         5. Synthetic liner exposed?         6. Bare spots?         7. Presence of burrowing animals?         8. Deep rooted vegetation?         9. Cracking?
		$\boxtimes$	D. Surface Water         1. Obstruction of flow ditches?         2. Erosion of ditches?         3. Silt & erosion control?         4. Culverts in good condition?         5. Evidence of overflow or uncontrolled flow?         6. Outfalls in good condition?         7. Sedimentation basin/ponds secure?
			E. Methane Gas Control 1. Does one exist?

		CH2MHILL
		Site Inspection Form
Yes	N/A	<ol> <li>Is system active or passive?</li> <li>Permanent methane gas probes?</li> <li>Locks on monitoring wells?</li> <li>Vents in working order?</li> <li>Vell seals in place?</li> <li>Methane levels within LEL limits?</li> <li>Monitoring reports current?</li> <li>Other</li> </ol>
$\boxtimes$		F. Leachate Collection System 1. Does one exist?
		<ul> <li>2. Collection method:</li> <li>a. Sump?</li> <li>b. Well point? <u>4 extraction wells</u></li> <li>c. Earthen basin/pond?</li> <li>d. Structure secured?</li> <li>e. Other</li> </ul>
$\boxtimes$ $\boxtimes$ $\square$		3. Pumping system: a. Automatic? b. Manual? c. Mechanically operable? d. Leaks/failures?
		<ul> <li>4. Disposals:</li> <li>a. Onsite pretreatment/treatment? <u>Water is treated in Plant (Area A).</u></li> <li>b. Surface discharge? (NPDES/SPDES)</li></ul>
	$\boxtimes$	<ul> <li>5. Transportation (if any):</li> <li>a. Chemicals?</li> <li>b. Filter cake?</li> <li>6. Ancillary equipment in good condition? (Pipes, valves, pumps, vaults, instruments and at )</li> </ul>
$\boxtimes$		7. Monitoring reports current? 8. Other
$\mathbb{X} \mathbb{X} \mathbb{X}$		<ul> <li>G. Groundwater Monitoring &amp; Recovery Wells (if any)</li> <li>1. Locks on wells?</li> <li>2. Wells in good condition?</li> <li>3. Well seals in good condition?</li> <li>4. Access to wells?</li> <li>5. Monitoring reports current?</li> <li>6. Other</li> </ul>



			Site Inspection Form
Yes	<u>No</u>	<u>N/A</u>	H. Treatment Plant
		$\boxtimes$	<ol> <li>Building in good condition? (Doors, windows, wells, roof)</li> </ol>
		$\boxtimes$	2. Visual tank inspection performed?
		$\boxtimes$	3. Visual inspection of pipes, valves, fittings etc.?
		$\boxtimes$	4. Pump operation/inspection performed?
		$\boxtimes$	5. Instruments operation/calibration?
		$\boxtimes$	6. Mixer operation/inspection?
		$\boxtimes$	7. Proper personal protection equipment?
		$\boxtimes$	8. Air compressor system functioning properly?
		$\boxtimes$	9. Filter press inspected?
		$\square$	10. Emergency generator functioning properly?
			I. Polymeric Marine Mattress (PMM)
		$\boxtimes$	1. Damage due to burrowing animals?
		$\boxtimes$	<ol><li>Damage due ice and/or ice flowages?</li></ol>
		$\boxtimes$	3. Impacts or damage due to the periodic dredging of the Buffalo River?
		$\boxtimes$	<ol><li>Impacts or damage due to navigation activities in the Buffalo River?</li></ol>
		$\boxtimes$	5. Establishment of woody plant growth causing displacement or stress on the
			system?
		$\boxtimes$	6. Areas of settlement or displacement of the system?
		$\boxtimes$	<ol><li>Erosion at the upstream and downstream limits of the system?</li></ol>
		$\boxtimes$	8. Damage to the stone infill adjacent to Outfall #006 and the concrete wall/sheet pile
			along the upstream limit of the system?
		$\boxtimes$	9. Damage to the stone infill within the marine mattresses?
		$\boxtimes$	10. Damage to the general integrity of the system (Look for splits, cuts and gaps)?

## J. General Comments

Gary Melnyk & Dave Szymanski, NYSDEC, attended inspection. Fencing may be needed along railroad embankment to prevent trespass.

Scott Aayles

Date: 04/22/2010



# Site Inspection Form

Site Proj Date	Name: <u>Buf</u> ect Number e: <u>8/16/10</u>	falo Color Area D r: <u>30074</u>	Weather: <u>Sunny 80 degrees</u> Assessment by: <u>Scott Sayles</u>
Yes			A. Security         1. Does fence exist?         2. Is there a breach in fence?         3. Locks on gate?         4. Posted signs?         5. Signs of trespassers/vandalism?         6. Other
	$\boxtimes$		B. General Site Conditions         1. Vegetation stress?         2. Mowing required?         3. Access road drivable?         4. Odors?         5. Other
			C. Cap Inspection         1. Exposed waste?         2. Side slope stable?         3. Erosion?         4. Leachate seeps (discolored vegetation)?         5. Synthetic liner exposed?         6. Bare spots?         7. Presence of burrowing animals?         8. Deep rooted vegetation?         9. Cracking?
			D. Surface Water         1. Obstruction of flow ditches?         2. Erosion of ditches?         3. Silt & erosion control?         4. Culverts in good condition?         5. Evidence of overflow or uncontrolled flow?         6. Outfalls in good condition?         7. Sedimentation basin/ponds secure?
$\boxtimes$			E. Methane Gas Control 1. Does one exist?

			CH2MHI	
			Site Inspection Form	
Yes	≥ □ ⊠ □ □ □ □		<ol> <li>Is system active or passive? <u>passive</u></li> <li>Permanent methane gas probes?</li> <li>Locks on monitoring wells?</li> <li>Vents in working order?</li> <li>Well seals in place?</li> <li>Methane levels within LEL limits?</li> <li>Monitoring reports current?</li> <li>Other</li> </ol>	
$\boxtimes$			<u>F. Leachate Collection System</u> 1. Does one exist?  2. Collection methods	
$\boxtimes$			2. Collection method: a. Sump? b. Well point? <u>4 extraction wells</u> c. Earthen basin/pond? d. Structure secured? e. Other	
$\boxtimes$			<ul> <li>3. Pumping system:</li> <li>a. Automatic?</li> <li>b. Manual?</li> <li>c. Mechanically operable?</li> <li>d. Leaks/failures?</li> </ul>	
			<ul> <li>4. Disposais:</li> <li>a. Onsite pretreatment/treatment? <u>Water is treated in Plant (Area A).</u></li> <li>b. Surface discharge? (NPDES/SPDES)</li></ul>	
		$\boxtimes$	<ul> <li>5. Transportation (if any):</li> <li>a. Chemicals?</li> <li>b. Filter cake?</li> <li>6. Ancillary equipment in good condition? (Pipes, valves, pumps, vaults, instruments and etc.)</li> </ul>	
$\boxtimes$			7. Monitoring reports current? 8. Other	
$\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$			<ul> <li>G. Groundwater Monitoring &amp; Recovery Wells (if any)</li> <li>1. Locks on wells?</li> <li>2. Wells in good condition?</li> <li>3. Well seals in good condition?</li> <li>4. Access to wells?</li> <li>5. Monitoring reports current?</li> <li>6. Other</li> </ul>	



## Site Inspection Form

Yes	$\mathbb{A} \otimes \mathbb{A} \otimes \mathbb{A} \otimes \mathbb{A} \otimes \mathbb{A} \otimes \mathbb{A}$
	$\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$ $\boxtimes$
	$\boxtimes$
	$\boxtimes$

# H. Treatment Plant

- 1. Building in good condition? (Doors, windows, wells, roof)
- 2. Visual tank inspection performed?
- 3. Visual inspection of pipes, valves, fittings etc.?
- 4. Pump operation/inspection performed?
- Instruments operation/calibration? \_\_\_\_\_
- 6. Mixer operation/inspection?
- 7. Proper personal protection equipment?
- 8. Air compressor system functioning properly?
- 9. Filter press inspected?
- 10. Emergency generator functioning properly?

## I. Polymeric Marine Mattress (PMM)

- Damage due to burrowing animals?
- 2. Damage due ice and/or ice flowages? \_\_\_\_
- 3. Impacts or damage due to the periodic dredging of the Buffalo River?
- Impacts or damage due to navigation activities in the Buffalo River?
- 5. Establishment of woody plant growth causing displacement or stress on the system?
- 6. Areas of settlement or displacement of the system?
- 7. Erosion at the upstream and downstream limits of the system?
- 8. Damage to the stone infill adjacent to Outfall #006 and the concrete wall/sheet pile along the upstream limit of the system?
- 9. Damage to the stone infill within the marine mattresses?
- 10. Damage to the general integrity of the system (Look for splits, cuts and gaps)?

## J. General Comments

EW-2, the water level is below the pump, so there is no extraction.

Acut Aafler 8/16/10



# Site Inspection Form

Site Name: Buffalo Color Area D			Weather: Sunny 52 degrees
Proj	ect Number	r: <u>30074</u>	Assessment by: Scott Sayles
Date	e: <u>10/27/10</u>	<u>)</u>	
Yes			A. Security         1. Does fence exist?         2. Is there a breach in fence?         3. Locks on gate?         4. Posted signs?         5. Signs of trespassers/vandalism?         6. Other
	$\mathbb{X}$		B. General Site Conditions         1. Vegetation stress?         2. Mowing required?         3. Access road drivable?         4. Odors?         5. Other
	$\boxtimes \boxtimes $		C. Cap Inspection         1. Exposed waste?         2. Side slope stable?         3. Erosion?         4. Leachate seeps (discolored vegetation)?         5. Synthetic liner exposed?         6. Bare spots?         7. Presence of burrowing animals?         8. Deep rooted vegetation?         9. Cracking?         10. Ponding water?         11. Evidence of methane seeps?         12. Other
		$\boxtimes \square \square \square \boxtimes$	D. Surface Water         1. Obstruction of flow ditches?         2. Erosion of ditches?         3. Silt & erosion control?         4. Culverts in good condition?         5. Evidence of overflow or uncontrolled flow?         6. Outfalls in good condition?         7. Sedimentation basin/ponds secure?         8. Other
$\square$			E. Methane Gas Control 1. Does one exist?

			CH2MHILL
			Site Inspection Form
Yes	$\stackrel{NO}{=} \square \square \square \square \square$		<ul> <li>2. Is system active or passive? <u>passive</u></li> <li>3. Permanent methane gas probes?</li> <li>4. Locks on monitoring wells?</li> <li>5. Vents in working order?</li> <li>6. Well seals in place?</li> <li>7. Methane levels within LEL limits?</li> <li>8. Monitoring reports current?</li> <li>9. Other</li> </ul>
$\boxtimes$			F. Leachate Collection System  1. Does one exist?  2. Collection method:
$\boxtimes$			a. Sump? b. Well point? <u>4 extraction wells</u> c. Earthen basin/pond? d. Structure secured? e. Other
$\square \boxtimes \boxtimes$			3. Pumping system: a. Automatic? b. Manual? c. Mechanically operable? d. Leaks/failures?
$\boxtimes$			<ul> <li>4. Disposals:</li> <li>a. Onsite pretreatment/treatment? <u>Water is treated in Plant (Area A).</u></li> <li>b. Surface discharge? (NPDES/SPDES)</li></ul>
		$\boxtimes$	<ul> <li>a. Chemicals?</li> <li>b. Filter cake?</li> <li>6. Ancillary equipment in good condition? (Pipes, valves, pumps, vaults, instruments and sta).</li> </ul>
$\boxtimes$			7. Monitoring reports current? 8. Other
$X \times X \times$			<ul> <li>G. Groundwater Monitoring &amp; Recovery Wells (if any)</li> <li>1. Locks on wells?</li> <li>2. Wells in good condition?</li> <li>3. Well seals in good condition?</li> <li>4. Access to wells?</li> <li>5. Monitoring reports current?</li> <li>6. Other</li> </ul>



Site	Inspection	Form
------	------------	------

H. Treatment Plant

N/A

 $\boxtimes$ 

 $\square$ 

 $\boxtimes$ 

 $\boxtimes$ 

Yes

 $\square$ 

No

- 1. Building in good condition? (Doors, windows, wells, roof) \_\_\_\_\_
- 2. Visual tank inspection performed?
- 3. Visual inspection of pipes, valves, fittings etc.?
- 4. Pump operation/inspection performed? \_\_\_\_\_
- 5. Instruments operation/calibration?
- 6. Mixer operation/inspection?
- 7. Proper personal protection equipment? \_\_\_\_\_
- 8. Air compressor system functioning properly?
- 9. Filter press inspected? \_

10. Emergency generator functioning properly?

#### I. Polymeric Marine Mattress (PMM)

- 1. Damage due to burrowing animals? \_\_\_\_\_
- 2. Damage due ice and/or ice flowages? \_\_\_\_
- 3. Impacts or damage due to the periodic dredging of the Buffalo River?
- Impacts or damage due to navigation activities in the Buffalo River? \_\_\_\_\_
- 5. Establishment of woody plant growth causing displacement or stress on the system? \_\_\_\_\_

6. Areas of settlement or displacement of the system? \_\_\_\_

- 7. Erosion at the upstream and downstream limits of the system? \_\_\_\_
- 8. Damage to the stone infill adjacent to Outfall #006 and the concrete wall/sheet pile along the upstream limit of the system? \_\_\_\_\_
- 9. Damage to the stone infill within the marine mattresses? \_\_\_\_\_
- 10. Damage to the general integrity of the system (Look for splits, cuts and gaps)?

## J. General Comments

Eugene Melnyk from the DEC on site. Animal burrow at EW-2.

AcrttAagh 10/27/10