1447429 Report No.: 87 **EA Project File:** Date: May 07, 2012 **EA Engineering, P.C.** Site No. 1-52-140 6712 Brooklawn Parkway, Suite 104 Contractor PM: AECOM - Walter Howard Syracuse, NY 13211-2158 NYSDEC PM: Jeffrey Dyber **Construction Manager: AECOM - Kent Wagoner** NYSDEC Division of Environmental Remediation Site Location: Albany St., Babylon, NY (Site No. 1-52-140) Air Monitoring: AECOM Health & Safety: AECOM Weather Conditions Pm General Description **Partly Cloudy Partly Cloudy** Am **Temperature** Pm 46 Am 61 Wind Direction 4-10 mph S 10-14 mph S Pm Am **HEALTH & SAFETY:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No (X) NA () Were there any changes to the Health & Safety Plan? Were there any exceedances at the perimeter *Yes () No () NA (X) action level reported on this date? Were there any dust/odor issues reported or *Yes () observed on this date? No (X) NA () **WASTE HAULING:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No () NA (X) Were there any vehicles that did not display proper D.O.T. numbers and placards? *Yes () No () NA (X) Were there any vehicles which were not tarped? **Materials Removed From Site:**

Disposal Facility: 110 Sand Company

Total Loads (on this date): 0
Total Loads (to date): 7

Total Estimated Daily Weight (tons): NA Total Approximate* Weight (tons): 140

^{*}Actual (total weight) adjusted periodically based on weight tickets submitted by the disposal facilities.

Summary of Events:

- Onsite at 11:00, spoke with Kent Wagoner and Sam Rowe (AECOM) regarding planned work for the day. Layne Drilling (Layne) onsite.
- Prior to the start of work, AECOM conducted health and safety meeting, and discussed overall goals for day.
- AECOM finished discharging DDC-07 development water to DDC-07 recirculation well. Water was pumped through
 two 10-gal filter vessels mounted on a secondary poly-lined containment pad. Pressure gauges were installed at
 the inlet and outlet of both vessels to monitor filter efficiency and a sampling port was installed on the outlet for
 sample collection and periodic measurements of turbidity. The filtration system operated at 100-110 gal per minute
 and achieved less than 50 nephelometric turbidity units (NTUs) between successive well volumes. Well
 development water was discharged in accordance with the Contract Documents Section 02686 Re-Circulation
 Wells and AECOMs Remedial Action Work Plan (RAWP) Section 2.3.1 Installation of DDC Wells.
- Layne mobilized drill rig and equipment to DDC-08 (see AECOM RAWP Figure 1). Traffic controls (cones, caution tape, and signage) were installed around DDC-08 well development exclusion zone. Poly was also maintained on the ground surface around DDC-08. Layne bailed 9-ft of sediment from DDC-08 via 4-in. diameter steel bailer. Material placed in super sacks and staged on Suffolk County Water Authority (SCWA) property. Sediment will be disposed of offsite once well development is complete.
- Layne began developing DDC-08 recirculation well using a surge block and pump. The lower well screen was individually surged and pumped until the turbidity stabilized. The well was packed off using an inflatable packer to isolate the two screened intervals during development. The lower screen was developed for 4 hours. Over that duration (240 minutes) the surge block was run continually and the pump was run 20% of the time, over equally distributed intervals. Well development water was pumped to a fractionation tank for settling. AECOM sampled the development water throughout the 4-hour period to determine when the screen was completely developed (less than 50 NTUs). DDC-08 lower screen was developed in accordance with the Contract Document Section 02686 Re-Circulation Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- No concerns/complaints from residences were documented.
- Off-site at 17:00.

VISITORS TO SITE:			
NAME	Representing	Entered Exclusion/CRZ Zone	
None		Yes () No ()	

PROJECT SCHEDULE:

- Develop DDC wells (19 April 11 May 2012).
- Process development water (24 April 11 May 2012)
- DDC eductor piping and well head assembly (25 April 11 May 2012).

ISSUES PENDING:

• None

ITEMS OF CONCERN:

• None

Site Representative: Robert Peterson

Date: 07 May 2012 Kohurt February



View of two vessel water filtration system mounted on secondary containment.



Development water discharge pump placed in secondary containment.



Layne pump/surge rods at DDC-08.



View of traffic controls around DDC-08.

1447429 Report No.: 88 **EA Project File:** Date: May 08, 2012 **EA Engineering, P.C.** Site No. 1-52-140 6712 Brooklawn Parkway, Suite 104 Contractor PM: AECOM - Walter Howard Syracuse, NY 13211-2158 NYSDEC PM: Jeffrey Dyber **Construction Manager: AECOM - Kent Wagoner** NYSDEC Division of Environmental Remediation Site Location: Albany St., Babylon, NY (Site No. 1-52-140) Air Monitoring: AECOM Health & Safety: AECOM Weather Conditions Pm General Description **Partly Cloudy Partly Cloudy** Am **Temperature** Pm 46 Am 61 Wind Direction 4-10 mph S 10-14 mph S Pm Am **HEALTH & SAFETY:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No (X) NA () Were there any changes to the Health & Safety Plan? Were there any exceedances at the perimeter *Yes () No () NA (X) action level reported on this date? Were there any dust/odor issues reported or *Yes () observed on this date? No (X) NA () **WASTE HAULING:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No () NA (X) Were there any vehicles that did not display proper D.O.T. numbers and placards? *Yes () No () NA (X) Were there any vehicles which were not tarped? **Materials Removed From Site:**

Disposal Facility: 110 Sand Company

Total Loads (on this date): 0 Total Loads (to date): 7

Total Estimated Daily Weight (tons): NA Total Approximate* Weight (tons): 140

^{*}Actual (total weight) adjusted periodically based on weight tickets submitted by the disposal facilities.

Summary of Events:

- Onsite at 07:00, spoke with Kent Wagoner and Sam Rowe (AECOM) regarding planned work for the day. Layne Drilling (Layne) onsite.
- Prior to the start of work, AECOM conducted health and safety meeting and discussed overall goals for day.
- Traffic controls (cones, caution tape, and signage) were installed around DDC-08 well development exclusion zone.
 Poly was also maintained on the ground surface around DDC-08.
- Layne finished developing DDC-08 recirculation well using a surge block and pump. The upper well screen was individually surged and pumped until the turbidity stabilized. The well was packed off using an inflatable packer to isolate the two screened intervals during development. The upper screen was developed for 4 hours. Over that duration (240 minutes) the surge block was run continually and the pump was run 20% of the time, over equally distributed intervals. Well development water was pumped to a fractionation tank for settling. AECOM sampled the development water throughout the 4-hour period to determine when the screen was completely developed (less than 50 nephelometric turbidity units [NTUs]). DDC-08 upper screen was developed in accordance with the Contract Document Section 02686 Re-Circulation Wells and AECOMs Remedial Action Work Plan (RAWP) Section 2.3.1 Installation of DDC Wells.
- AECOM discharged DDC-08 development water to DDC-08 recirculation well. Water was pumped through two 10-gal filter vessels mounted on a secondary poly-lined containment pad. Pressure gauges were installed at the inlet and outlet of both vessels to monitor filter efficiency and a sampling port was installed on the outlet for sample collection and periodic measurements of turbidity. The filtration system operated at 100-110 gallons per minute and achieved less than 50 NTUs between successive well volumes. Well development water was discharged in accordance with the Contract Documents Section 02686 Re-Circulation Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- Layne installed traffic controls and a detour at DDC-09. DDC-09 is located within the intersection of Benjoe Dr. and
 Beta Dr. (see AECOM RAWP Figure 1). The intersection was completely shut down and a detour was installed south
 of DDC-09 at Beta Dr. and Corral Dr. The detour directed traffic west on Corral Dr. Local traffic was permitted
 beyond the detour. Once the traffic controls were installed, Layne bailed 9-feet of sediment from DDC-09 via 4-inch
 diameter steel bailer. Material placed in super sacks and staged on SCWA property. Sediment will be disposed of
 off-site once well development is complete.
- No concerns/complaints from residences were documented.
- Offsite at 16:00.

VISITORS TO SITE:		
NAME	Representing	Entered Exclusion/CRZ Zone
None		Yes () No ()

PROJECT SCHEDULE:

- Develop DDC wells (19 April 11 May 2012).
- Process development water (24 April 11 May 2012)
- DDC eductor piping and well head assembly (25 April 18 May 2012).
- Treatment system startup (21 May 2012)

ISSUES PENDING:

None

ITEMS OF CONCERN:

None

Site Representative: Robert Peterson

Date: 08 May 2012 Robert February



Layne lowering development pump at DDC-08.



View of development water from DDC-08. Turbidity: 7.0 NTUs



Layne bailing sediment from DDC-09.



View of traffic controls at DDC-09. Standing at Benjoe Dr. & Beta Dr. intersection looking south.

1447429 Report No.: 89 **EA Project File:** Date: May 09, 2012 **EA Engineering, P.C.** Site No. 1-52-140 6712 Brooklawn Parkway, Suite 104 Contractor PM: AECOM - Walter Howard Syracuse, NY 13211-2158 NYSDEC PM: Jeffrey Dyber **Construction Manager: AECOM - Kent Wagoner** NYSDEC Division of Environmental Remediation Site Location: Albany St., Babylon, NY (Site No. 1-52-140) Air Monitoring: AECOM Health & Safety: AECOM Weather Conditions **Rain Showers** Pm General Description Rain showers Am Рm **Temperature** 57 Am 61 Wind Direction 9-14 mph SW 9-14 mph SW Pm Am **HEALTH & SAFETY:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No (X) NA () Were there any changes to the Health & Safety Plan? Were there any exceedances at the perimeter *Yes () No () NA (X) action level reported on this date? Were there any dust/odor issues reported or *Yes () observed on this date? No (X) NA () **WASTE HAULING:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No () NA (X) Were there any vehicles that did not display proper D.O.T. numbers and placards? *Yes () No () NA (X) Were there any vehicles which were not tarped? **Materials Removed From Site:**

Disposal Facility: 110 Sand Company

Total Loads (on this date): 0 Total Loads (to date): 7

Total Estimated Daily Weight (tons): NA Total Approximate* Weight (tons): 140

^{*}Actual (total weight) adjusted periodically based on weight tickets submitted by the disposal facilities.

Summary of Events:

- Onsite at 07:00, spoke with Kent Wagoner and Sam Rowe (AECOM) regarding planned work for the day. Layne Drilling (Layne) onsite.
- Prior to the start of work, AECOM conducted health and safety meeting and discussed overall goals for day.
- Layne installed DDC-08 eductor piping. The components of the eductor pipe include a 6-in. and 8-in. diameter pipe (connected by a reducer coupling), with two 6-in. x 10-in. packers, a 125-slot screened section at the top, and three rows of eleven 1.5-in. diameter holes in the bottom portion of the eductor pipe (see AECOMs Remedial Action Work Plan (RAWP) Figure 2 DDC Well Construction). The eductor was set at the bottom of the well and extended to the surface with the top of the eductor screen 8-ft above the water table. The two packers were installed below the upper DDC well screen in between the well casing and the 6-in. section of the eductor. The well head, airline connections, and a 4-in. air supply pipe (blower tube) will be installed at a later date. The eductor pipe and components were installed in accordance with AECOMs RAWP Section 2.3.1 Installation of DDC Wells and Figure 2 DDC Well Construction.
- Layne installed traffic controls and a detour at DDC-09. DDC-09 is located within the intersection of Benjoe Dr. and Beta Dr. (see AECOM RAWP Figure 1). The intersection was completely shut down and a detour was installed south of DDC-09 at Beta Dr. and Corral Dr. The detour directed traffic west on Corral Dr. Local traffic was permitted beyond the detour.
- Layne began developing DDC-09 recirculation well using a surge block and pump. The lower well screen was individually surged and pumped until the turbidity stabilized. The well was packed off using an inflatable packer to isolate the two screened intervals during development. The lower screen was developed for 4 hours. Over that duration (240 minutes) the surge block was run continually and the pump was run 20% of the time, over equally distributed intervals. Well development water was pumped to a fractionation tank for settling. AECOM sampled the development water throughout the 4-hour period to determine when the screen was completely developed (less than 50 nephelometric turbidity units [NTUs]). DDC-09 lower screen was developed in accordance with the Contract Document Section 02686 Re-Circulation Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- Aarco Environmental delivered a roll-off for disposal of "sludge" material from frac tanks and fine-grained sand that
 was bailed from DDC recirculation wells.
- No concerns/complaints from residences were documented.
- Offsite at 17:00.

VISITORS TO SITE:			
NAME	Representing	Entered Exclusion/CRZ Zone	
Jeff Dyber	NYSDEC PM	Yes (X) No ()	

PROJECT SCHEDULE:

- Develop DDC wells (19 April 11 May 2012).
- Process development water (24 April 11 May 2012)
- DDC eductor piping and well head assembly (25 April 18 May 2012).
- Treatment system startup (21 May 2012)

ISSUES PENDING:

None

ITEMS OF CONCERN:

None

Site Representative: Robert Peterson

Date: 09 May 2012 Fobut February



View of traffic controls at DDC-09, looking east.



View of detour at Beta Dr & Corral Dr. intersection, looking north.



Layne surging and pumping DDC-09 lower screen.



View of final development water from DDC-09 lower screen. Turbidity: 7.2 NTUs

1447429 Report No.: 90 **EA Project File:** Date: May 10, 2012 **EA Engineering, P.C.** Site No. 1-52-140 6712 Brooklawn Parkway, Suite 104 Contractor PM: AECOM - Walter Howard Syracuse, NY 13211-2158 NYSDEC PM: Jeffrey Dyber **Construction Manager: AECOM - Kent Wagoner** NYSDEC Division of Environmental Remediation Site Location: Albany St., Babylon, NY (Site No. 1-52-140) Air Monitoring: AECOM Health & Safety: AECOM Weather Conditions Pm General Description **Partly Cloudy Partly Cloudy** Am Рm **Temperature** 56 Am 64 Wind Direction 5-9 mph WNW 9-12 mph WNW Pm Am **HEALTH & SAFETY:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No (X) NA () Were there any changes to the Health & Safety Plan? Were there any exceedances at the perimeter *Yes () No () NA (X) action level reported on this date? Were there any dust/odor issues reported or *Yes () observed on this date? No (X) NA () **WASTE HAULING:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No () NA (X) Were there any vehicles that did not display proper D.O.T. numbers and placards? *Yes () No () NA (X) Were there any vehicles which were not tarped?

Materials Removed From Site:

Disposal Facility: 110 Sand Company

Total Loads (on this date): 0
Total Loads (to date): 7

Total Estimated Daily Weight (tons): NA Total Approximate* Weight (tons): 140

^{*}Actual (total weight) adjusted periodically based on weight tickets submitted by the disposal facilities.

Summary of Events:

- Onsite at 07:00, spoke with Kent Wagoner and Sam Rowe (AECOM) regarding planned work for the day. Layne Drilling (Layne) on-site.
- Prior to the start of work, AECOM conducted health and safety meeting and discussed overall goals for day.
- Layne installed traffic controls and a detour at DDC-09. DDC-09 is located within the intersection of Benjoe Dr. and Beta Dr. (see AECOM Remedial Action Work Plan (RAWP) Figure 1). The intersection was completely shut down and a detour was installed south of DDC-09 at Beta Dr. and Corral Dr. The detour directed traffic west on Corral Dr. Local traffic was permitted beyond the detour.
- Layne finished developing DDC-09 recirculation well using a surge block and pump. The upper well screen was individually surged and pumped until the turbidity stabilized. The well was packed off using an inflatable packer to isolate the two screened intervals during development. The upper screen was developed for 4 hours. Over that duration (240 minutes) the surge block was run continually and the pump was run 20% of the time, over equally distributed intervals. Well development water was pumped to a fractionation tank for settling. AECOM sampled the development water throughout the 4-hour period to determine when the screen was completely developed (less than 50 nephelometric turbidity units [NTUs]). DDC-09 upper screen was developed in accordance with the Contract Document Section 02686 Re-Circulation Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- AECOM discharged DDC-09 development water to DDC-09 recirculation well. Water was pumped through two 10-gal filter vessels mounted on a secondary poly-lined containment pad. Pressure gauges were installed at the inlet and outlet of both vessels to monitor filter efficiency and a sampling port was installed on the outlet for sample collection and periodic measurements of turbidity. The filtration system operated at 100-110 gal per minute and achieved less than 50 NTUs between successive well volumes. Well development water was discharged in accordance with the Contract Documents Section 02686 Re-Circulation Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- AECOM installed eductor well heads at DDC-05, DDC-06, and DDC-08. The 24-in. diameter well heads were positioned onto the 12-in. diameter recirculation wells via reducer couplings. Silicon was applied to the reducer couplings to achieve an air tight seal. Permanent well head covers were installed at DDC-05 and DDC-06. The covers have a total of 4 openings (two viewing ports, one 4-in. air supply opening, and one 6-in. air return opening). 6-in. air return lines were connected to DDC-05 and DDC-06 well heads. 4-in. air supply lines and eductor blower tubes will be connected next week. Piezometers were extended halfway up DDC-05 and DDC-06 well heads using 2-in. diameter wire reinforced flexible piping. The flexible piping positioned the piezometers on the exterior of the well heads for access (see attached photos). Plastic bags were used to temporarily seal openings in well heads to prevent debris from entering.
- No concerns/complaints from residences were documented.
- Offsite at 17:00.

VISITORS TO SITE:			
NAME	Representing	Entered Exclusion	n/CRZ Zone
None		Yes ()	No ()

PROJECT SCHEDULE:

- Develop DDC wells (19 April 11 May 2012).
- Process development water (24 April 11 May 2012)
- DDC eductor piping and well head assembly (25 April 18 May 2012).
- Treatment system startup (21 May 2012)

ISSUES PENDING:

None

ITEMS OF CONCERN:

None

Site Representative: Robert Peterson

Date: 10 May 2012 Kohurt February



View of DDC-05 well head, 6-in. air return connection, and piezometers.



View of DDC-05 piezometers (green flexible piping).



View of DDC-05 well head cover and 6-in. air return connection.



View of DDC-08 vault.

May 10, 2012 Report No.: 90 **EA Project File:** 1447429 Date:



DDC-08 eductor and piezometers.





Layne pumping and surging DDC-09.



DDC-09 upper screen final development water. Turbidity: ~7 NTUs

1447429 Report No.: 91 **EA Project File:** Date: May 11, 2012 **EA Engineering, P.C.** Site No. 1-52-140 6712 Brooklawn Parkway, Suite 104 Contractor PM: AECOM - Walter Howard Syracuse, NY 13211-2158 NYSDEC PM: Jeffrey Dyber **Construction Manager: AECOM - Kent Wagoner** NYSDEC Division of Environmental Remediation Site Location: Albany St., Babylon, NY (Site No. 1-52-140) Air Monitoring: AECOM Health & Safety: AECOM Weather Conditions Pm General Description Sunny NA Am Pm **Temperature** 58 Am NA Wind Direction 8 mph NW Pm Am NA **HEALTH & SAFETY:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No (X) NA () Were there any changes to the Health & Safety Plan? Were there any exceedances at the perimeter *Yes () No () NA (X) action level reported on this date? Were there any dust/odor issues reported or *Yes () observed on this date? No (X) NA () **WASTE HAULING:** (*If any box(s) below are checked "Yes", list the deviation under the "Items for Concern" section of this report). *Yes () No () NA (X) Were there any vehicles that did not display proper D.O.T. numbers and placards? *Yes () No () NA (X) Were there any vehicles which were not tarped? **Materials Removed From Site:**

Disposal Facility: 110 Sand Company

Total Loads (on this date): 0 Total Loads (to date): 7

Total Estimated Daily Weight (tons): NA Total Approximate* Weight (tons): 140

^{*}Actual (total weight) adjusted periodically based on weight tickets submitted by the disposal facilities.

Summary of Events:

- Onsite at 07:00, spoke with Kent Wagoner and Sam Rowe (AECOM) regarding planned work for the day. Layne Drilling (Layne) onsite.
- Prior to the start of work, AECOM conducted health and safety meeting and discussed overall goals for day.
- Layne installed traffic controls and a detour at DDC-09. DDC-09 is located within the intersection of Benjoe Dr. and Beta Dr. (see AECOM Remedial Action Work Plan (RAWP) Figure 1). The intersection was completely shut down and a detour was installed south of DDC-09 at Beta Dr. and Corral Dr. The detour directed traffic west on Corral Dr. Local traffic was permitted beyond the detour.
- Layne installed DDC-09 eductor piping. The components of the eductor pipe include a 6-inch and 8-inch diameter pipe (connected by a reducer coupling), with two 6-in. x 10-in. packers, a 125-slot screened section at the top, and three rows of eleven 1.5-in. diameter holes in the bottom portion of the eductor pipe (see AECOMs RAWP Figure 2 DDC Well Construction). The eductor was set at the bottom of the well and extended to the surface with the top of the eductor screen 8-ft above the water table. The two packers were installed below the upper DDC well screen in between the well casing and the 6-in. section of the eductor. The well head, airline connections, and a 4-in. air supply pipe (blower tube) will be installed at a later date. The eductor pipe and components were installed in accordance with AECOMs RAWP Section 2.3.1 Installation of DDC Wells and Figure 2 DDC Well Construction.
- AECOM began discharging DDC-09 development water to DDC-09 recirculation well. Water was pumped through
 two 10-gal filter vessels mounted on a secondary poly-lined containment pad. Pressure gauges were installed at
 the inlet and outlet of both vessels to monitor filter efficiency and a sampling port was installed on the outlet for
 sample collection and periodic measurements of turbidity. The filtration system operated at 100-110 gal per minute
 and achieved less than 50 nephelometric turbidity units (NTUs) between successive well volumes. Well
 development water was discharged in accordance with the Contract Documents Section 02686 Re-Circulation
 Wells and AECOMs RAWP Section 2.3.1 Installation of DDC Wells.
- No concerns/complaints from residences were documented.
- Offsite at 10:30.

VISITORS TO SITE:		
NAME	Representing	Entered Exclusion/CRZ Zone
None		Yes () No ()

PROJECT SCHEDULE:

- Develop DDC wells (19 April 11 May 2012).
- Process development water (24 April 11 May 2012)
- DDC eductor piping and well head assembly (25 April 18 May 2012).
- Treatment system startup (21 May 2012)

ISSUES PENDING:

None

ITEMS OF CONCERN:

• None

Site Representative: Robert Peterson

Date: 11 May 2012

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<u>Report No.: 91 EA Project File: 1447429 Date: May 11, 2012</u>



View of eductor piping and packer being installed.