ENVIRONMENTAL REMEDIATION GROUP
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

January 3, 2013

Mr. Alex Czuhanich
New York State Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233

Re: Groundwater Treatment System - Well Decommissioning Report
Olin Chemicals Buffalo Ave. Facility, Niagara Falls, NY

Dear Mr. Czuhanich:

As part of our periodic review of the groundwater treatment system's performance, in a letter dated October 18, 2012 Olin recommended the decommissioning of monitoring wells OBA-12A, OBA-12B, OBA-12C, OBA-13A (ob), OBA-13A, OBA-13B, and OBA-13C. In a letter dated November 6, 2012, New York State Department of Environmental Conservation approved well decommissioning (Attachment 1).

The wells were decommissioned on December 5-6, 2012. Olin decommissioned the wells in accordance with NYSDEC decommissioning regulations (CP-43) for uncontaminated overburden monitoring wells/piezometers and bedrock wells. The Well Decommissioning Records (Attachment 2) provide decommissioning details for each well. For the A-zone wells, the PVC casing and well screens were pulled from the borehole and a standard grout mixture was added to the base of the borehole via tremie method to a depth of approximately 5 feet below ground surface. The remaining boreholes were filled with soil to the existing ground surface. For the B- and C-Zone wells, the steel casings were overdrilled to approximately 2 feet below the ground surface. The boreholes were tremie-grouted to within 5 feet of the ground surface and then filled with soil to the ground surface. All protective casings and surface completions including bollards and concrete pads were removed, and the ground surface was completed to match the existing grade.

If you have any questions or concerns, please contact me directly at (423) 336-4576.

Sincerely,

Richard W. McClure, PG
Principal
OLIN CORPORATION

cc: David Share: Olin ERG, Cleveland, TN
Gina Senia: Olin, Niagara Falls, NY
Tony Englund: AMEC E&I, Kennesaw, GA

Attachments (2):
2012-11-06 NYSDEC Well decommission approval
Well Decommissioning Records

ATTACHMENT 1

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau E, 12th Floor
625 Broadway, Albany, New York 12233-7017
Phone: (518) 402-9814 • **Fax:** (518) 402-9819
Website: www.dec.ny.gov

Joe Martens
Commissioner

November 6, 2012

Mr. Richard W. McClure
Olin Corp., Environmental Remediation Group
3855 N. Ocoee, Suite 200
Cleveland, Tennessee 37312

RE: Proposed Well Decommissioning
Olin Chemicals, Buffalo Avenue Facility, Niagara Falls, New York
AOC Index No. R9-4171-94-08, NYSDEC Site No. 932051A and B

Dear Mr. McClure:

The New York State Department of Environmental Conservation (the Department) has reviewed your letter on the above-referenced subject dated October 18, 2012. In your letter, Olin proposes decommissioning off-site monitoring well clusters OBA-12 and OBA-13 (specifically, wells OBA-12A, -12B, and -12C and OBA-13A, -13A(ob), -13B, and -13C). The wells are located north of Buffalo Avenue on property owned by the New York State Department of Transportation (NYSDOT).

The wells are no longer used for hydraulic or constituent monitoring at the site and NYSDOT has expressed an interest in having the wells removed if they are no longer required for site monitoring. The subject wells, along with other monitoring wells north of Buffalo Avenue, are not significantly impacted by site-related contamination. Olin has, therefore, proposed decommissioning the wells in accordance with the Department's Commissioner's Policy *CP-43: Groundwater Monitoring Well Decommissioning Policy*.

The proposed well decommissioning is approved with the following conditions:

1. NYSDOT requires a work permit to perform the necessary work on their property. Olin must contact NYSDOT's Region 5 (Buffalo) office to obtain the required permit(s).

2. NYSDOT has requested that bollards protecting the well clusters also be removed. Per our recent correspondence, the Department understands that Olin intends to remove the bollards and restore the area to pre-existing condition.

If you have any questions regarding this letter, please call me at 518-402-9813.

Sincerely,

Alex G. Czuhanich
Project Manager
Remedial Section B, Remedial Bureau E
Division of Environmental Remediation

ec: F. Garbe, NYSDOT, Buffalo
D. Carpenter, USEPA, Region 2
D. Weiss, NYSDEC, Region 9
M. Cruden, NYSDEC
D. Radtke, NYSDEC

ATTACHMENT 2

WELL DECOMMISSIONING RECORD

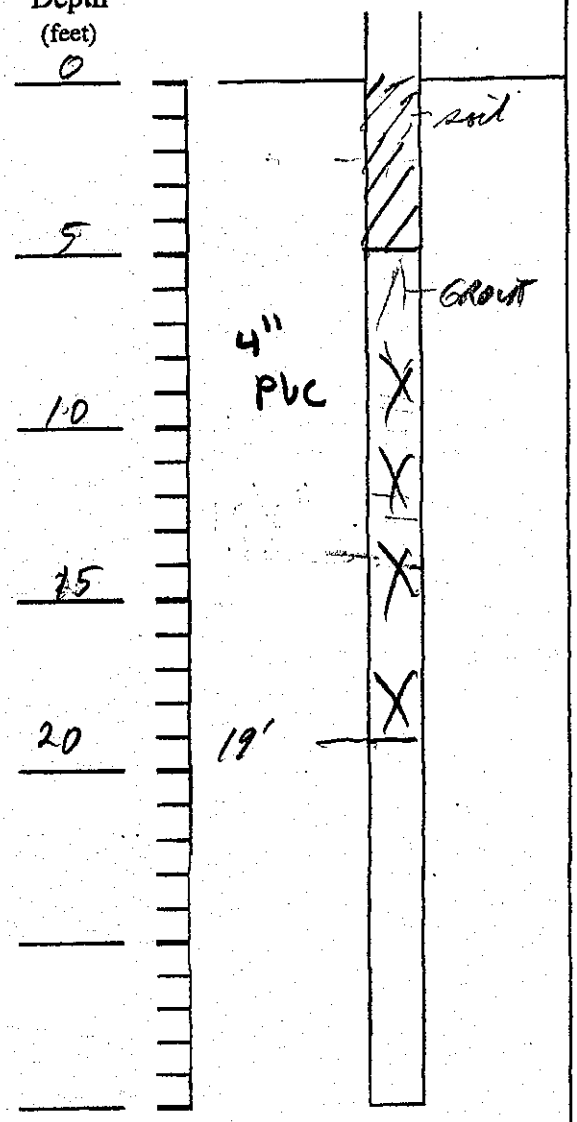
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC

Well I.D.: OBA 13A
Driller: S. LORANTY
Inspector:
Date: 12-5-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	20
Casing type/dia. (in)	4" PVC
CASING PERFORATING	
Equipment used	Drill Rods
Number of perforations/foot	
Size of perforations	
Interval perforated	Bottom Plug
GROUTING	
Interval grouted (FBLS)	20'-5'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	15.6
Quantity of cement used (lbs.)	198
Cement type	I
Quantity of bentonite used (lbs.)	7.8
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	23
Volume of grout used (gal.)	20

WELL SCHEMATIC*



COMMENTS: Remove 2-4" Guard Post + 6" pro-casing + 2x2 concrete pad - leave end plug out then tremie grout + Pulled all PVC Top Soil + Seed

Drilling Contractor

Department Representative

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

WELL DECOMMISSIONING RECORD

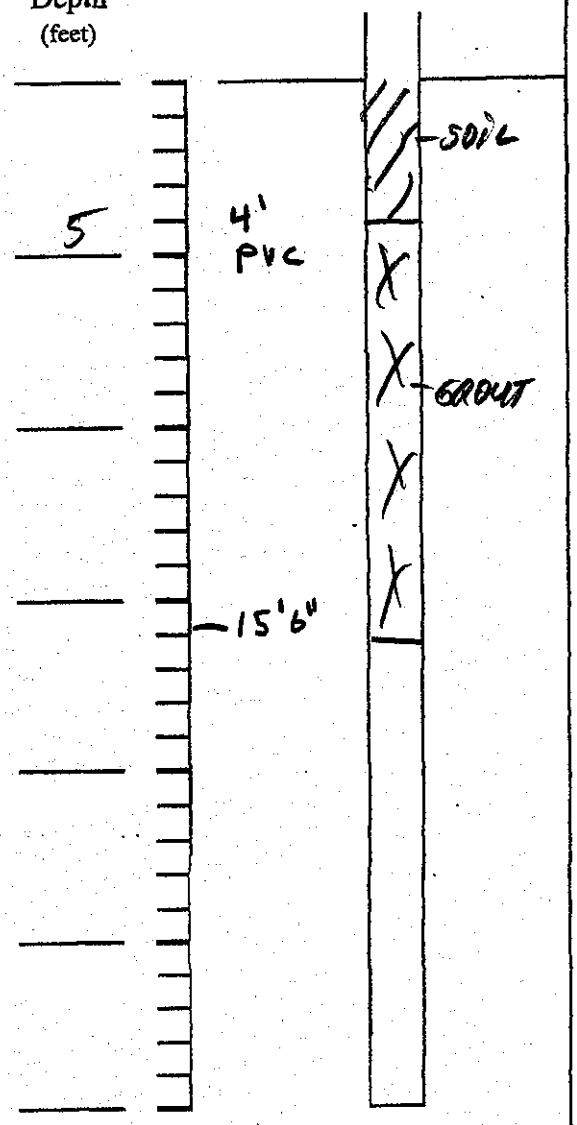
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC

Well I.D.: OBA - 13 A0B
Driller: S. LORANTY
Inspector:
Date:

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	15' 6"
Casing type/dia. (in)	4" PVC
CASING PERFORATING	
Equipment used	Drill Rods
Number of perforations/foot	
Size of perforations	
Interval perforated	Bottom Plug
GROUTING	
Interval grouted (FBLS)	15' 6-5'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	15.6
Quantity of cement used (lbs.)	188
Cement type	I
Quantity of bentonite used (lbs.)	2.8
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	23
Volume of grout used (gal.)	21

WELL SCHEMATIC*



COMMENTS: Remove 2 4" Guard Post + 6" Pro-casing + 2x2 concrete Pad - drove out end Plug then tremie grout - Pulled 4" PVC top soil + seed

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

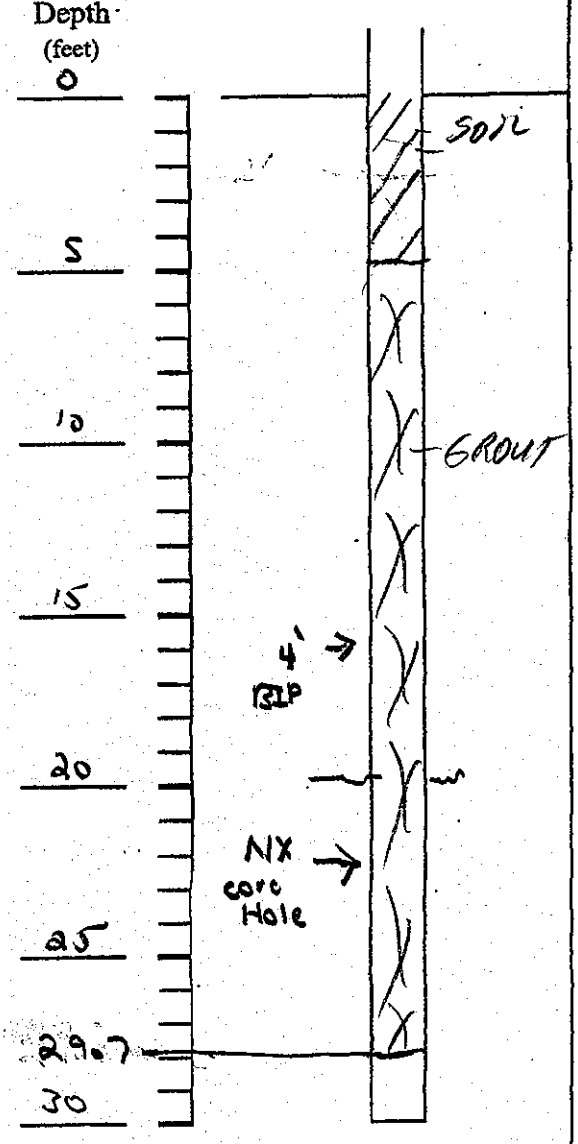
WELL DECOMMISSIONING RECORD

Site Name: OLIN	Well I.D.: OBA13B
Site Location: NIAGARA FALLS, NY	Driller: S. LORANTY
Drilling Co.: NOTHNAGLE DRILLING, INC	Inspector:
	Date: 12-5-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-21
Drilling Method(s)	6¼ HSA
Borehole Dia. (in.)	10"
Temporary Casing Installed? (y/n)	No
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	2'
Casing type/dia. (in)	4" BIP
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	29.7-5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	23.4
Quantity of cement used (lbs.)	282
Cement type	1
Quantity of bentonite used (lbs.)	11.7
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	34.5
Volume of grout used (gal.)	25.0

WELL SCHEMATIC*



COMMENTS: Remove 6" Pro-Casing over dr.ll w.th 6¼ Augur to 2' cut of 4" BIP Also removed 2-4" Guard Post and 2x2 concrete pad - Top Soil + reseeded

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

WELL DECOMMISSIONING RECORD

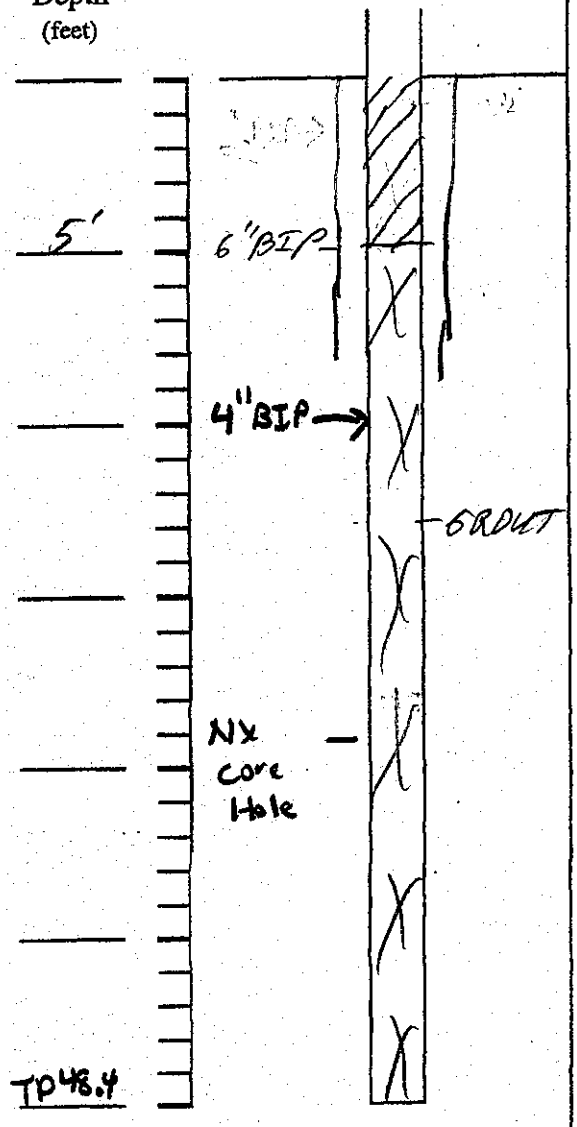
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC

Well I.D.: OBA-13C
Driller: S. LORANTY
Inspector:
Date: 12-5-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0'-21'
Drilling Method(s)	10¼ HSA
Borehole Dia. (in.)	12"
Temporary Casing Installed? (y/n)	N
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	2' 4" BIP
Casing type/dia. (in)	2' 6" BIP
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	48.4-5'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	23.4
Quantity of cement used (lbs.)	282
Cement type	I
Quantity of bentonite used (lbs.)	11.7
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	34.5
Volume of grout used (gal.)	34.5

WELL SCHEMATIC*



COMMENTS: Remove 8" Pro-casing + 2x2 Pad + 2-4" Guard Post, overdrilled 6" + 4" BIP to 2' cut off, tremie grout - top soil + seed

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

WELL DECOMMISSIONING RECORD

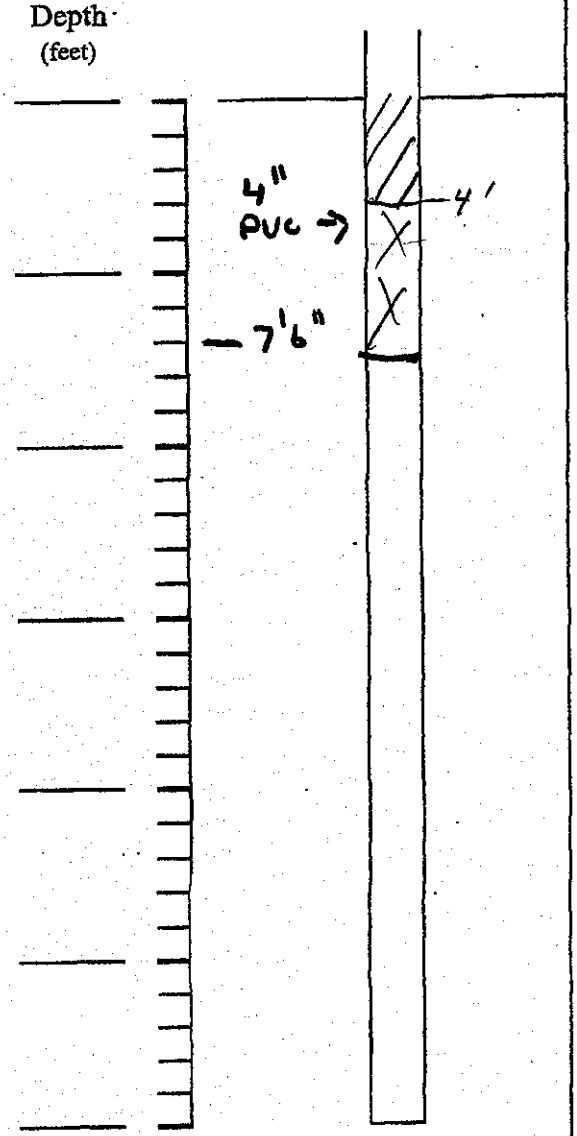
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC

Well I.D.: OBA 12A
Driller: S. LORANTY
Inspector:
Date: 12-6-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	7'6"
Casing type/dia. (in)	4" PVC
CASING PERFORATING	
Equipment used	Drill Rods
Number of perforations/foot	
Size of perforations	
Interval perforated	Bottom Plug
GROUTING	
Interval grouted (FBLS)	7'6" - 4'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	7.8
Quantity of cement used (lbs.)	94
Cement type	I
Quantity of bentonite used (lbs.)	3.9
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	11.5
Volume of grout used (gal.)	8.2

WELL SCHEMATIC*



COMMENTS: Remove 6" Pro Casing + 2 - 4" Guard post, + 2x2 concrete pad - drove out Bottom plug tremie grout + pulled 4" PVC

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

WELL DECOMMISSIONING RECORD

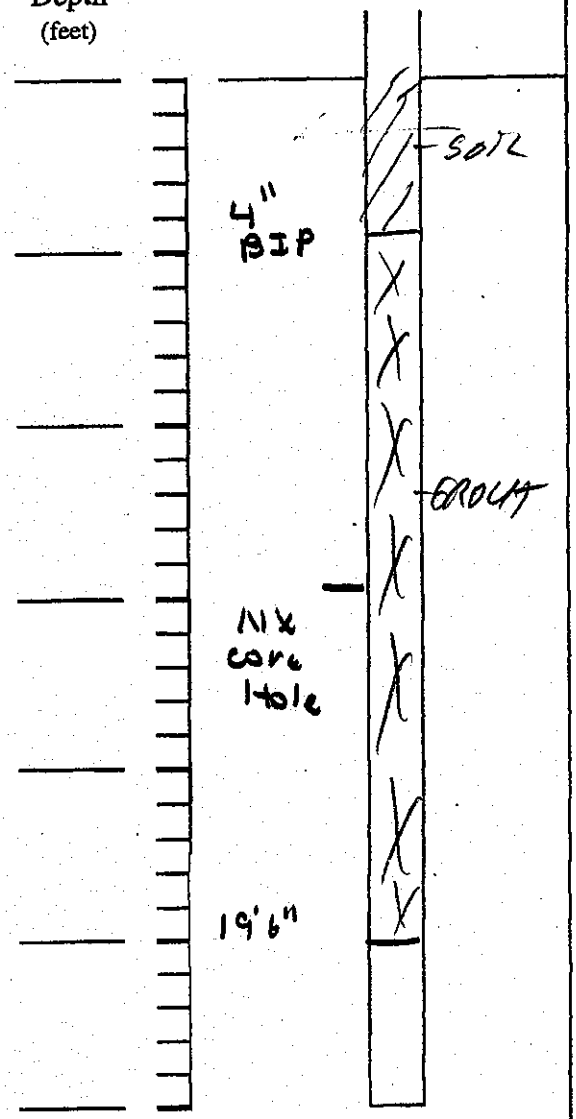
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC.

Well I.D.: OBA-12B
Driller: S. LORANTY
Inspector:
Date: 12-6-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	2'
Drilling Method(s)	6¼ Auger
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	2'
Casing type/dia. (in)	4" BIP
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	19'6"-5'
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	15.6
Quantity of cement used (lbs.)	188
Cement type	I
Quantity of bentonite used (lbs.)	7.8
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	23
Volume of grout used (gal.)	15

WELL SCHEMATIC*



COMMENTS: Remove 6" Pro-Casing + 2 4" Guard post + 2x2 concrete pad - over drill to 2' out of 4" BIP, tremie grout

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

WELL DECOMMISSIONING RECORD

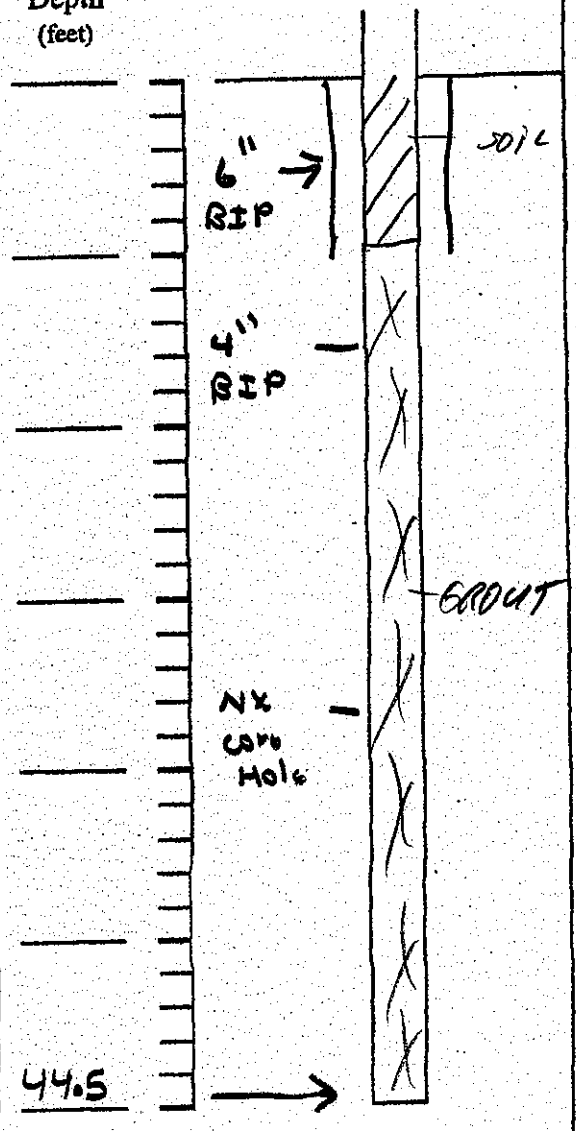
Site Name: OLIN
Site Location: NIAGARA FALLS, NY
Drilling Co.: NOTHNAGLE DRILLING, INC.

Well I.D.: OBA-12C
Driller: S. LORANTY
Inspector:
Date: 12-6-12

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-2
Drilling Method(s)	10¼ HSA
Borehole Dia. (in.)	12"
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	2'-4" BIP
Casing type/dia. (in)	2'-6" BIP
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	44.5-5'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	23.4
Quantity of cement used (lbs.)	282
Cement type	I
Quantity of bentonite used (lbs.)	11.7
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	34.5
Volume of grout used (gal.)	29.7

WELL SCHEMATIC*



COMMENTS: Remove 6" PVC casing + 2 4" guard post + 2x2 concrete pad - over dr. 11" 4" + 6" BIP - cut off - transfer grout

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative