

5 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

Forland W. Me Gen

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



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

Site Name: OLIN	Well I.D.: 0 BA 13 A
Site Location: NINGARA FACCS, NY	Driller: S. LORANTY
Drilling Co.: NOTHNAGLE PRILLING, INC.	Inspector:
Oliming Con Maring Con Telling	Date: 19 -5.12
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth
	(feet)
OVERDRILLING	
Interval Drilled	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Drilling Method(s)	
Borehole Dia. (in.) Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	H-60
Method of installing	<u> </u>
CASING PULLING	/o - Puc X
Method employed	
Casing retrieved (feet)	Y
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used Drill Rods	
Number of perforations/foot	
Size of perforations	
Interval perforated By How Plug	20 = 19' X
GROUTING	20 = 19'
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.) Quantity of cement used (lbs.) 15.6 188	
Cement type	
Quantity of bentonite used (lbs.) 7.8	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Remove 2-4 Gward Post + 6" pro-ce	* Sketch in all relevant decommissioning data, includ
to a smoot and a Avoir and also out the	
T X EX CONSTITUTE PARTY OF THE	well stickup, etc.
Top Soil + Seed	

WELL DECOMMISSIONING RECORD	
	_
Site Name: OLIN	Well I.D.: OBA - 13 AOB
Site Location: NIMEARA FALLS, NY	Driller: S. LORANTY
Drilling Co.: NOTHNAGLE SKILLING, INC	Inspector:
	Date:
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth
(1 m m an arrive)	(feet)
OVERDRILLING	
Interval Drilled	- 1/2-50iL
Drilling Method(s)	1 // // // //
Borehole Dia. (in.) Temporary Casing Installed? (y/n)	5 7 4' 2
Depth temporary casing installed	5 7 PVC W
Casing type/dia. (in.)	
Method of installing	
	X
CASING PULLING Method employed	- 1 600UT
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used Poll Reds	1-15'6"
Number of perforations/foot Size of perforations	
Interval perforated Gathern Plus	
Interval perfection	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared For each batch record:	
Quantity of water used (gal.)	
Quantity of water used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
	andra de la companya de la companya Internación de la companya de la co
COMMENTS: Romovo & 4" Good Poet + 6" Pro-cosin	* Sketch in all relevant decommissioning data, including:
+ 2x2 concret Pol - drove out end Plug then	interval overdrilled, interval grouted, casing left in hole,
tramic grout + Pulled 4" PUC	well stickup, etc.
top soil + seed	
Di Gu	Danier aviotue
Drilling Contractor	Department Representative

Site Name: OLIN	Well I.D.: OBARB	
	Driller: S. LORANTY	
Site Location: NIAGARA FALLS, NY	Inspector:	
Orilling Co.: NOTHNAGLE SKILLING, FNC.	Date: 12-5-/2	
DECOMMISSIONING DATA (Fill in all that apply) OVERDRILLING Interval Drilled Orilling Method(s) Borehole Dia. (in.)	WELL SCHEMATIC* Depth (feet) State of the second content of the	
Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing		
CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in)	-10	
CASING PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated	15	
Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)	29.7 29.7 30	
COMMENTS: Remove 6" Pro. Caging over dv. 11 with 6te Augus to 2' cut of 4" BIP Also removed 2. 4" Guard Post and 2x2 Concrute pad - Top Soil + resceded Stu Yuy	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in how well stickup, etc. Department Representative	

Site Name: OLIN		Well I.D.: 0BA -/3C	
		Driller: S. LORANTY	
Site Location: NIAGARA FACES, NY	T 4 6	Inspector:	- CVIIII
Orilling Co.: NOTHNAGLE PRILLING	, INC		
			1-5-12
DECOMMISSIONING DAT (Fill in all that apply)	A	Depth (feet)	ELL SCHEMATIC*
Orilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n)	HCH W	5' =	6"010
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# of batches prepared	<u>.4-5°</u>		- core 1-tole
Quantity of cement used (lbs.) 2 Cement type	3.4 8.2 E		
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)	1-7 p 7-5 4-5	T048.4 _	
COMMENTS: Romovo 8" Pro-coging to + a-4" Guerd Post, over durilled to a! cut off, tramia grant - + seed		→ .	evant decommissioning data, including data, including detain the decommission of the detail decommission details and decommission decom

WELL DECOMMISSIONING RECORD	
	<u>.</u>
Site Name: OLIN	Well I.D.: OBA 12 A
Site Location: NIAGARA FACCS, NY	Driller: S. LORANTY
Drilling Co.: NOTHNAGLE SKILLING, INC.	Inspector:
	Date: 12-6-12
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth (feet)
OVERDRILLING	
Interval Drilled	→ //,
Drilling Method(s)	- "
Borehole Dia. (in.)	J 4" 4'
Temporary Casing Installed? (y/n)	- Puc -> X
Depth temporary casing installed	
Casing type/dia. (in.)	- X
Method of installing	-76 K
CASING PULLING	
Method employed	
Cocing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used Dr.11 Red.s	
Number of perforations/foot	
Size of perforations	
Interval perforated Bottom Ping	
an oxympto	
GROUTING Interval grouted (FBLS)	
Initer var grounds (1 223)	
# of batches prepared	
Por each batch record: Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
1186	* Sketch in all relevant decommissioning data, including:
COMMENTS: Remove 6" Pro Cosing + 2 - 4" Guod	interval overdrilled, interval grouted, casing left in hole,
post, + axa concret pol - drove out Buttom	1
plus tramic grout + pivilal 4" pur	well stickup, etc.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

Department Representative

Site Name: OLIN Site Location: NIAGARA FACCS, NY Drilling Co.: NOTHNAGLE PRILLING, FNC		Well I.D.: OBA	-1aB
			Driller: S. LORANTY
willing Co: MOTHMAGIE PRILL	ING INC	Inspector:	
ining co NOTANAOLE INICE	(100) +1-0	Date: 12-6	-12
			HEMATIC*
DECOMMISSIONING		Depth	REMAIC
(Fill in all that appl	y)	(feet)	1
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terval Drilled	3,		. 11
rilling Method(s)	6 4 Augar		1/-5.
orehole Dia. (in.)		- ,	
emporary Casing Installed? (y/n)		-	. (//
epth temporary casing installed			IP V
asing type/dia. (in.)			X
lethod of installing			
ACDIC DITTING		-	
ASING PULLING Method employed			
asing retrieved (feet)	81		Y
asing type/dia. (in)	H" BIP		$ \Lambda _{\infty}$
asing type/dia. (m)	<u> </u>		1. 1
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lumber of perforations/foot			x /
ize of perforations		\	re h
nterval perforated		_ _ H	ole /
			1/0
ROUTING			
nterval grouted (FBLS)	19,9,-2,		
of batches prepared			
or each batch record:	100		
Quantity of water used (gal.)	15.6	— , c'	n X
Quantity of cement used (lbs.)	188		"
ement type quantity of bentonite used (lbs.)	7.8		
Quantity of calcium chloride used (lbs.)	6		
volume of grout prepared (gal.)	23		
Volume of grout used (gal.)	15		
0.000			
COMMENTS: Remove 6" Pro . Co.	5.M + 2 4" KIN	* Sketch in all relevant decor	omissioning data, includi
cost - 2x2 concrete ped . 0		interval overdrilled, interval	
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a' cut of 4"BIP, travie	-1/2-1	•	

Site Name: OLIN Site Location: NIAGARA FACE, NY		Well I.D.: OB	
			Driller: S. LORANTY
Drilling Co.: NOTHNAGLE PRILLING, FNC DECOMMISSIONING DATA (Fill in all that apply)		Inspector:	
		Date: 12-6-/2	
		Depth (feet)	
OVERDRILLING			
Interval Drilled	0-2		
Drilling Method(s)	10t Itsh	-	" > /
Borehole Dia. (in.)	12"		
Temporary Casing Installed? (y/n)			ST P
Depth temporary casing installed			
Casing type/dia. (in.)			$\mathbf{x} = [X]$
Method of installing			" _//
CASING PULLING			316 \
Method employed			1/1
Casing retrieved (feet)	31-4816		
Casing type/dia. (in)	13 P. BEL		
CASING PERFORATING			
Equipment used			1+60
Number of perforations/foot			
Size of perforations			
Interval perforated			Nx -
GROUTING			Hole
Interval grouted (FBLS)	44.5.51		The state of the s
# of batches prepared			
For each batch record:			
Quantity of water used (gal.)	23.4		
Quantity of cement used (lbs.)	282		1 N
Cement type Quantity of bentonite used (lbs.)	17		
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)	34.6	44.5	
Volume of grout used (gal.)	29.7		
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Drilling Contractor