State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council

MEMORANDUM

To: George Desch, Sites Management Section Chief
From: Michael B. Smith, Hazardous Materials Specialist/Hydrogeologist MBS
Date: 4 June 1993
Subject: Possible site in Colchester

I recently received two letters from David Hazelett of Hazelett Strip Casting Corporation located in Colchester next to Mallets Bay. Apparently, as part of refinancing a loan, his company contracted with Aquatec to have an environmental assessment conducted on this property. During this assessment, Aquatec's analysis of total dissolved metals discovered nickel in the groundwater in exceedence of the Groundwater Protection Rule and Strategy enforcement standards (GES). The values were:

MW-1: 0.56 mg/l
MW-4: 1.47 mg/l
MW-5: 0.37 mg/l
MW-6: 0.53 mg/l

(Note: GES for nickel = 0.350 mg/l, or 350 μg/l)
(Note: There is no MCL for nickel in the latest Water Supply Rule)

In relation to the dissolved metals analyses, unfiltered groundwater samples were also analyzed. In this analysis, lead , copper, and cadmium also slightly exceed the GES in MW-1. However, this is probably due to soil or sediment in the groundwater sample, not actual contamination of the groundwater. (The question of whether or not to use filtered or unfiltered samples in determining whether or not groundwater is above or below MCLs or exceeds the GES should be addressed by this division. This may be important because typically, groundwater for small public water systems and homes using private wells is not filtered.)

Aquatec also analyzed the groundwater samples for volatile organic compounds (VOCs). They found only low levels of 1,1,1-TCA, 1,1-DCA, and 1,1-DCE. 1,1,1-TCA and 1,1-DCE were well below the GES. There is no GES for 1,1-DCA. There were no VOCs above the GESs.

Soils analyses were conducted on drill cuttings. These showed:

nickel: 14.3 - 19.2 mg/kg
copper: 9 - 23 mg/kg
chromium: 8.7 - 13.4 mg/kg
lead: 3.1 - 4.8 mg/kg

The results of this investigation indicate that there is low level inorganic contamination of the groundwater above the GES in one area of the factory. The area of this exceedence is limited to an area adjacent to, and directly downgradient of a leach field. This leach field receives approximately 800 gpd of waste wash water from a steel band washing process. This wash water is the most likely source for this contamination.

The area of contamination is located at the ~~western~~ NE edge of the property, next to a campground. The campground, factory, and surrounding areas are all on municipal water. It is possible that contaminated groundwater flows from the factory property onto the campground property. However, because of the low levels of contamination, and the relative immobility of metals in groundwater, it is unlikely that the contaminant plume extends to any distance.

Hazelett has since added settling tanks and changed their operation to minimize the potential for further contamination.

The company needs a response from us as to what we plan to do about this potential problem. In my opinion, there is very little contamination at this site, and I am unsure whether or not it warrants formally designating this a site. The source of contamination has probably been removed due to the changes in the washing and manufacturing processes, nickel is relatively immobile, the concentrations of nickel in the groundwater reduce very quickly as the groundwater travels away from the leach field, and there are no readily apparent receptors, indicating remediation is not required. The only possible reason to make this a site, would be the potential that some contaminated groundwater has migrated off site.

If we determine this needs to be a formal site, the only action I would suggest is to monitor the groundwater every six months, and to monitor the effluent to the leach field to determine whether or not any further contamination is reaching the leach field.

I am attaching a map of the site and some sample results. Please review this by the end of next week if possible. I would like to get together with you and chuck to discuss our course of action when I get back from Minneapolis next week.

cc: Chuck Schwer

TABLE 4 VOC Analytical Results Summary

Parameters	Enforcement Standard	MW-1 (02/12/93)	MW-1 (04/16/93)	MW-2 (03/30/93)	MW-3 (02/12/93)	MW-3 (03/30/93)	MW-4 (02/12/93)	MW-4 (03/30/93)	MW-5 (03/30/93)	MW-6 (03/30/93)	MW-7 (03/30/93)
1,1,1-trichloroethane	200	2J	2J	4J	<5.0	1J	4J	4J	25/23	31	<5
1,1-dichloroethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	3J	3J	20/19	11	<5
Chloroform	NA	5	5J	<5.0	<5.0	<5.0	1J	2J	<5/<5	4J	<5
2-butanone (MEK)	NA	<10	<10	<10	<10	<10	<10	1J	<10/<10	<10	<10
1,1-dichloroethene	7.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1J/1J	<5	<5
trichlorofluoromethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6/6	3J	<5
acetone	NA	<5.0	LCB	LCB	<5.0	LCB	<5.0	LCB	LCB	22C	50C
chlorobenzene	100	<5	<5	<5	<5	<5	<5	<5	<5/<5	<5	<5
2-propanol (IPA)	NA	<10	<10	<10	<10	<10	<10	<10	<10/<10	<10	<10
toluene	2420	<5	<5	<5	<5	<5	<5	<5	<5/<5	<5	<5
unknown dichlorobenzene	620/75	<10	<10	<10	<10	<10	<10	<10	<10/<10	<10	<10
total xylenes	400	<5	<5	<5	<5	<5	<5	<5	<5/<5	<5	<5
bromodichloromethane	NA	<5	<5	<5	<5	<5	<5	<5	<5/<5	<5	<5
4-methyl-2-pentanone (MIBK)	NA	<10	<10	<10	<10	<10	<10	<10	<10/<10	<10	<10

See laboratory reports for complete results.

TABLE 4 VOC Analytical Results Summary

Parameters	Enforcement Standard	septic 1 (03/30/93)	septic 2 (03/30/93)	storm drain 1 (03/30/93)	storm drain 2 (03/30/93)	storm drain 3 (03/30/93)	belt wash pit (03/24/93)	belt wash pit (03/31/93)
1,1,1-trichloroethane	200	<18	2J	<5	<5	<5	<14	<5
1,1-dichloroethane	NA	<18	3J	<5	<5	<5	<14	<5
Chloroform	NA	7J	15	<5	<5	<5	21	17
2-butanone (MEK)	NA	<36	7J	<10	<10	<10	<28	<10
1,1-dichloroethene	7.0	<18	<5	<5	<5	<5	<14	<5
trichlorofluoromethane	NA	<18	<5	<5	<5	<5	<14	<5
acetone	NA	270C	28	33C	LCB	15C	42C	31
chlorobenzene	100	18	7	<5	<5	<5	<14	<5
2-propanol (IPA)	NA	200	37	<10	<10	<10	<14	220
toluene	2420	520	290	<5	<5	<5	<14	<5
unknown dichlorobenzene	620/75	250	210	<10	<10	<10	<14	<10
total xylenes	400	<18	1J	<5	<5	<5	<14	<5
bromodichloromethane	NA	<18	<5	<5	<5	<5	<14	2J
4-methyl-2-pentanone (MIBK)	NA	<36	<10	<10	<10	<10	<28	1J

See laboratory reports for complete results.

TABLE 5 Inorganic Analytical Results Summary

Parameter	Enforcement Standard	MW-1 (02/12/93) (total)	(04/15/93) (dissolved)	MW-3 (02/12/93) (total)	(03/30/93) (dissolved)	MW-4 (02/12/93) (total)	(03/30/93) (dissolved)	MW-5 (03/30/93) (dissolved)	MW-6 (03/30/93) (dissolved)	MW-7 (03/30/93) (dissolved)
phosphate,total	NA	30	24	0.12	1.40	0.50	3.1	7.6	2.7	2.1
cadmium, total	0.005	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chromium, total	0.050	0.099	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
copper, total	1.0	1.20	0.23	0.022	<0.02	0.26	0.139	0.055	0.034	<0.02
nickel, total	0.350	0.87	0.56	<0.04	<0.04	1.61	1.47	0.37	0.53	<0.04
lead, total	0.020	0.096	<0.005	0.007	<0.005	0.008	<0.005	<0.005	<0.005	<0.005
oil & grease	NA	---	---	---	---	---	---	---	---	---

See laboratory analytical reports for complete results

TABLE 5 Inorganic Analytical Results Summary

Parameter	Enforcement Standard	septic 1 (03/30/93) (total)	septic 2 (03/30/93) (total)	storm drain 1 (03/30/93) (dissolved)	storm drain 2 (03/30/93) (dissolved)	storm drain 3 (03/30/93) (dissolved)	belt wash pit (03/24/93) (total)	belt wash pit (03/31/93) (total)
phosphate,total	NA	26	28	0.23	0.07	0.19	101	71
cadmium, total	0.005	0.065	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chromium, total	0.050	0.136	<0.02	<0.02	<0.02	<0.02	<0.02	0.024
copper, total	1.0	3.1	0.142	0.130	<0.02	<0.02	0.128	0.21
nickel, total	0.350	0.197	0.070	<0.04	<0.04	<0.04	0.43	0.35
lead, total	0.020	0.097	0.006	0.021	<0.005	<0.005	0.028	0.0152
oil & grease	NA	---	---	---	---	---	79	59

See laboratory analytical reports for complete results

TABLE 6 Field Measurement Data

Parameters	MW-1 (02/12/93)	MW-1 (04/15/93)	MW-2 (03/30/93)	MW-3 (02/12/93)	MW-3 (03/30/93)	MW-4 (02/12/93)	MW-4 (03/30/93)
Depth to Water (ft)	18.55	17.95	19.67	19.61	19.59	23.52	23.53
Tempature (C)	9.2	12.0	---	10.3	12.5	8.6	10.0
pH (std. Units)	6.07	6.55	---	5.12	6.14	5.88	6.62
Specific Conductance (umhos/cm)	260	692	---	200	192	200	591

Parameters	MW-5 (03/30/93)	MW-6 (03/30/93)	MW-7 (03/30/93)	storm drain 1 (03/30/93)	storm drain 2 (03/30/93)	storm drain 3 (03/30/93)
Depth to Water (ft)	21.12	23.28	26.93	---	---	---
Tempature (C)	11.8	11.7	10.00	8.2	4.0	4.4
pH (std. Units)	6.00	6.35	7.50	6.88	6.73	6,93
Specific Conductance (umhos/cm)	616	294	165	660	910	580

TABLE 7 Soil Vapor Survey PID Results

Location	Depth (feet)	PID (ppm)	Comments
12,000 gallon UST			
1SB-1	10	0.6	
1SB-2	10	0.6	
1SB-3	10	0.5	
1SB-4	10	0.5	Lab samples collected at location 1SB-5 and 1SB-11.
1SB-5	8	1.6	
1SB-6	8	0.6	
1SB-7	9	0.8	
1SB-8	8	0.5	
1SB-9	8	0.6	
1SB-10	8	0.7	
1SB-11	---	---	
3,000 gallon UST			
2SB-1	10	0.6	
2SB-2	8	0.6	Lab samples collected at location 2SB-4 and 2SB-6. Petroleum odor noted at locations 2SB-4 and 2SB-6.
2SB-3	8	0.6	
2SB-4	8	5.0	
2SB-5	8	1.2	
2SB-6	8	3.3	
2SB-7	8	1.0	
2SB-8	8	1.1	
5,000 gallon UST			
3SB-1	10	2.2	Lab samples collected at location 3SB-1 and 3SB-3.
3SB-2	8	2.0	
3SB-3	8	2.3	
3SB-4	8	0.5	
3SB-5	8	1.3	

Note: Laboratory Samples collected between 5' - 9' below ground surface.

FAXED 6-2-93

6-2 3:30

HAZELETT STRIP-CASTING CORPORATION

P.O. Box 600
217 Lakeshore Drive
Colchester, Vermont 05446 USA

Phone: 802/863-6376
Fax: 802/863-1523
Telex: 954638

FAX TRANSMITTAL FORM

WE ARE TRANSMITTING 2 PAGE(S), INCLUDING THIS TRANSMITTAL SHEET.

COMPANY NAME: Department of Environmental Conservation
Fax No. 1-244-5141 244 5184

ATTENTION: Mr. Michael Smith

FROM: Mr. David M. Hazelett

DATE: June 2, 1993

SUBJECT: My Letter Dated May 7, 1993

MESSAGE

Dear Mike:

Attached please find a copy of a letter we mailed to you on May 7, 1993.

Regards,

David Hazelett -me

/me

Attachment

FAXED 6-2-93

HAZELETT STRIP-CASTING CORPORATION

P.O. Box 600
217 Lakeshore Drive
Colchester, Vermont 05446 USA

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SUBJECT: My Letter Dated May 7, 1993

MESSAGE

Dear Mike:

Attached please find a copy of a letter we mailed to you on May 7, 1993.

Regards,

David Hazelett (me)

/me

Attachment

Hazelett
STRIP-CASTING CORPORATION
MALLETTS BAY
217 LAKESHORE DRIVE
POST OFFICE BOX 600
COLCHESTER, VERMONT 05446
TELEPHONE (802) 863-6575
TELEX 954636
CABLE: HAZELETT BURLINGTON VERMONT

May 7, 1993

Mr. Michael Smith
Hazardous Materials Division
Department of Environmental Conservation
103 So. Main Street
Waterbury, VT 05871-0404

Dear Mike:

Our plant is located in Colchester. This spring we commissioned Aquatec, Inc., to perform an environmental site assessment. As part of this assessment, a series of monitor wells were placed to identify whether any ground water contamination existed in the area surrounding a waste water leachfield.

The findings of their recently-completed report indicate:

> The presence of VOCs at various concentrations in monitor wells installed adjacent to the belt wash leachfield. The Vermont Groundwater Enforcement Standard (GES) for these parameters were not exceeded, however, the Preventative Action Limit (PAL) for 1,1-dichloroethane (0.7 ug/l) was exceeded at location MW-5.
>
> The GES for nickel was exceeded at locations MW-4, MW-5 and MW-6.

Additionally, Aquatec noted there is an absence of human health and environmental receptors in adjacent property. They also noted the relatively immobile nature of nickel in ground water. They recommend we periodically monitor ground water quality by implementing a plan to analyze samples for VOCs, nickel and copper.

We are notifying your department of the report results and Hazelett's intention to follow Aquatec's recommendations.

Sincerely,

David N. Hazelett

/me
c: Mr. Robert Ross, Aquatec, Inc.
Mr. David Timmons, Town of Colchester