SUMMARY
of
ENVIRONMENTAL SITE ASSESSMENT WORK
and
INTERIM REMEDIATION MEASURES
at
BUCKLEY AND MANN, INC.

Prepared by

CAMP DRESSER & MCKEE INC.

Cambridge, MA

April 1992

ENVIRONMENTAL SITE ASSESSMENT WORK
and
INTERIM REMEDIATION MEASURES
at
BUCKLEY AND MANN, INC.

1.0 SUMMARY

As described below and in the attached reports, Buckley & Mann, Inc. (B&M) operated facultative, biological, wastewater treatment lagoons and disposed of residues from its operations on its property in Norfolk, Massachusetts. In 1986, the Division of Water Pollution Control of the Massachusetts Department of Environmental Protection (MDEP) obtained an order through the Attorney General's office which led to a comprehensive, environmental site assessment at B&M, termination of wet processing operations, and initiation of remediation activities.

At the outset of the remediation activities in 1986, the MDEP was represented by the groundwater section of the Division of Water Pollution Control (DWPC). The initial work predated the implementation of the Massachusetts Contingency Plan (MCP). In a 1992 review of the project status, Camp Dresser & McKee, Inc. (CDM), B&M's environmental consultant for the project, concluded that the remediation efforts should continue under the MCP, rather than under the DWPC. This conclusion was based on the absence of sludge in the former dyehouse wastewater treatment lagoons, and the presence of chromium and petroleum hydrocarbons in the lagoon subsoils.

This report summarizes the assessment and remediation work to date, and supports B&M's attached submission under the MCP. The submission includes a Preliminary Assessment Report, an Interim Site Classification Site Form, and a Waiver Application Form.

2.0 INTRODUCTION

Investigation of the B&M site was initiated following a Commonwealth of Massachusetts Final Judgment, issued July 25, 1986. The Judgment stated that industrial wastewater discharges into facultative lagoons and the Mill River by Buckley and Mann, Inc. violated Clean Water Act, G.L.c. 21 SS 26-53.

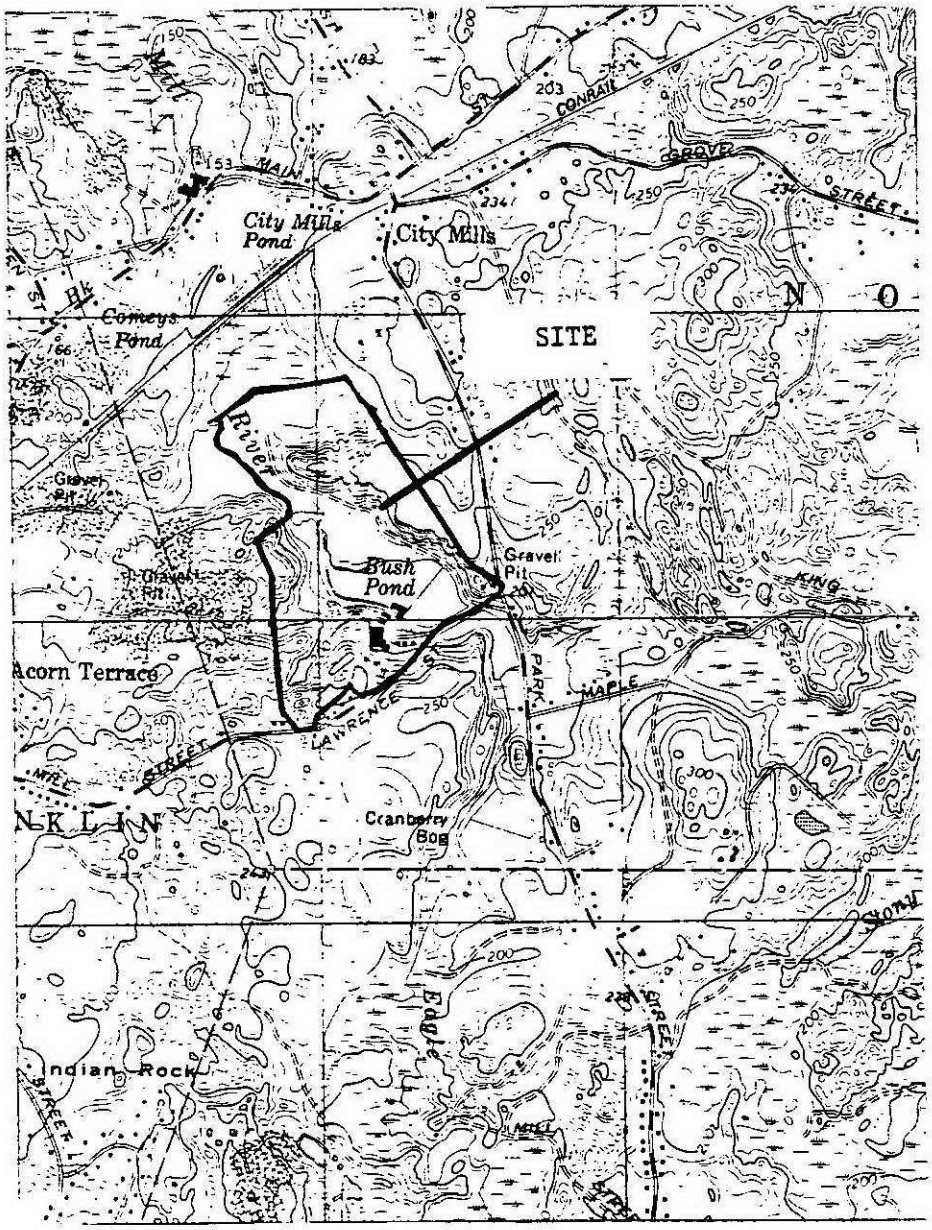
As a result of the Judgment, B&M retained CDM to complete a comprehensive site assessment. The assessment, entitled "Report on an Environmental Site Assessment at Buckley and Mann, Inc., Norfolk MA, July 1986" was performed prior to the effective date of the 1988 MDEP Massachusetts Contingency Plan (MCP) regulations. A copy of the Report is attached. B&M also terminated in 1986 those operations which produced industrial wastewater.

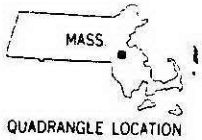
Since 1986, B&M has completed interim measures to relocate certain contaminated soils on-site and thereby reduce the potential for migration, and has also initiated planning for further remediation. The "Status Report and Revised Lagoon Closure Plan for Buckley and Mann, Inc. Norfolk, MA", dated October 1990, provided recommendations for further remediation. A copy of that report is attached.

3.0 SITE DESCRIPTION

B&M operates a textile manufacturing facility on a 125 acre site at 17 Lawrence Avenue, Norfolk, Massachusetts. Figure 1 shows the site location on a portion of the U.S.G.S. Wrentham, MA 7.5 minute quadrangle topographic map. The Universal Transverse Mercador (UTM) and Cartesian coordinates for the site are 46-63-088mN, 3-05-325mE and $42^{o}06'23"N$, $71^{o}21'18"W$, respectively. Approximately 10 percent of the site is now or was formerly occupied by industrial operations and approximately 2 acres were used for industrial wastewater treatment lagoons.

As indicated on Figure 2, the B&M facilities and wastewater lagoons





QUADRANGLE LOCATION

FIGURE 1

SITE LOCATION

WRENTHAM, MASS.
N4200—W7115/7.5

1964
PHOTOREVISED 1979
AMS 6768 III SE-SERIES V814

SCALE 1:25 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

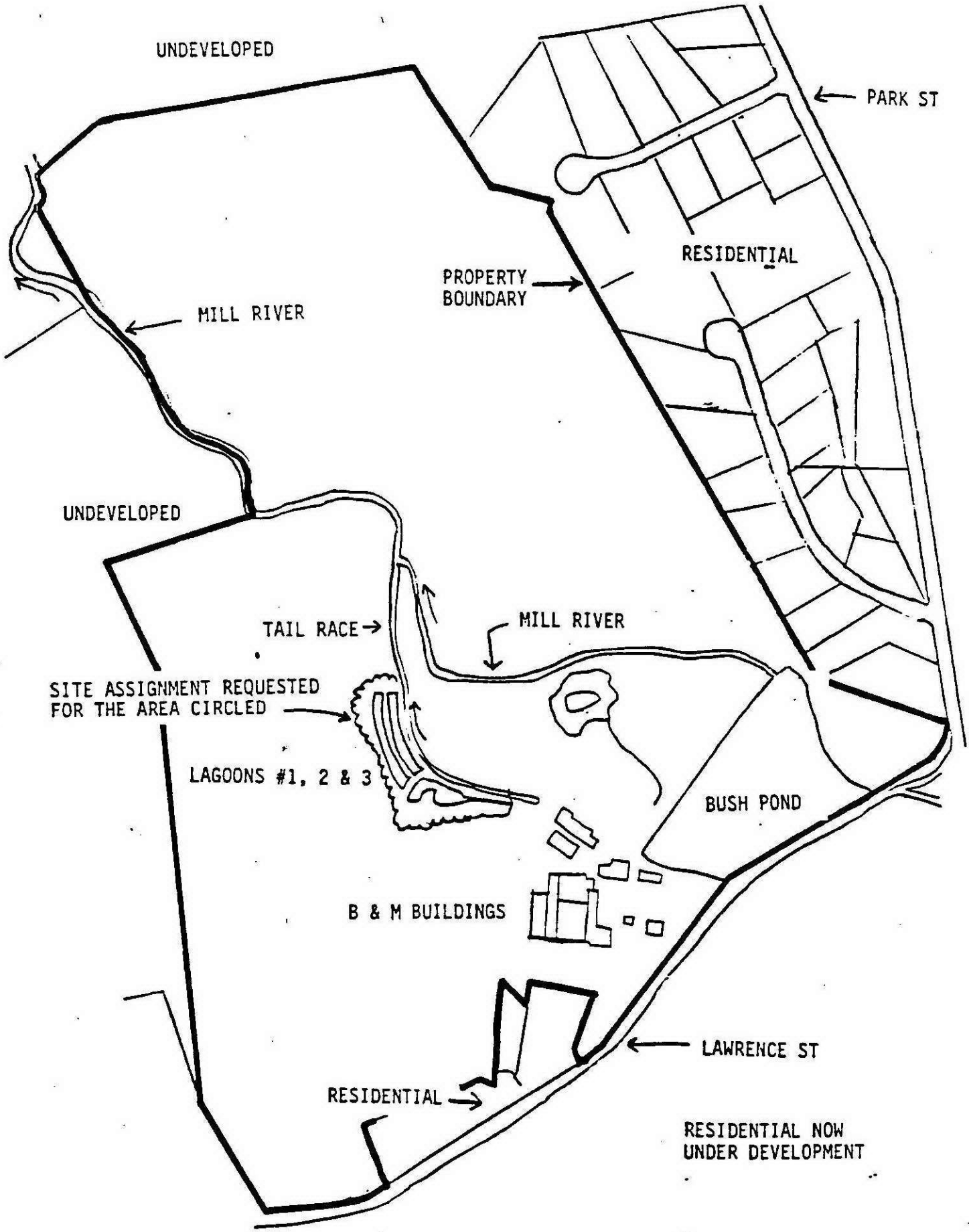


FIGURE 2
BUCKLEY & MANN PROPERTY BOUNDARY
AND ADJACENT LAND USE

Scale 1" is about 430'

are located on the south central portion of the property. The Mill River flows south to north through the middle of the property. The property is bordered to the south by Lawrence Avenue, to the east by a residential neighborhood and to the north and west by undeveloped land.

The Mill River was dammed, creating Bush Pond, during the 19th century to provide power to the plant through a water wheel. Although the water wheel was removed long ago, the Tail Race from the wheel remains as a small drainage parallel to the Mill River until it merges with the River down stream of Bush Pond.

The topography of the site is defined by the Mill River. The River forms a small valley with elevation differences varying from around 160 feet above sea level near the River to 250 feet on the eastern and western sides of the property. The River drains run-off from the site and the surrounding hillsides. The valley includes up to 300 feet of low lying, seasonally marshy land on either side of River. Based on the site topography, groundwater also converges from the east and west toward the Mill River. This was confirmed by groundwater elevation measurements in wells installed in the shallow, unconsolidated glacial soils and underlying bedrock.

The only potential sensitive receptor is the Mill River. The River receives return water from cranberry bogs approximately 0.5 miles upstream from the site, and flows into City Mills Pond approximately 1 mile downstream. There are no public water supply wells within at least 1 mile from the site. Residences to the east and south obtain water from individual bedrock wells which are approximately 0.5 mile from the contaminated portion of the site.

4.0 SITE HISTORY

The commercial history of the site was described in the 1986 Environmental Assessment Report. The summary presented below updates the 1986 report to include recent activities related to lagoon closure

and site remediation.

Before 1926	The 1986 CDM Report mentions that B&M has manufactured textiles on the site for over 100 years.
1926	The Norfolk Assessors Office records B&M as property owners.
1926-1965	B&M operated a wool carbonizer process and a dyehouse which generated wastewater. Carbonizer wastewater was discharged to Carbonizer Lagoon. dyehouse wastewater was discharged to Lagoon #1.
Circa 1940	B&M improved a soil dike, mixed with fiber residue, to separate the Carbonizer Lagoon from the Mill River.
1965	The Carbonizer process was discontinued.
1978	Lagoons #2 and #3 were constructed. Lagoon #2 received the effluent from Lagoon #1. Lagoon #3 was used to divert a major groundwater spring from the western hillside drainage away from Lagoons #1 and #2. The spring upwelled in the center of Lagoon #3, which was breached to allow drainage of the clean water to the tail race.
June 1986	The dyehouse operations were discontinued.
July 1986	The Commonwealth of Massachusetts issued a "Final Judgment" alleging that B&M violated Massachusetts Clean Waters Act G.L.c. 21, SS 26-53. B&M was required to either obtain a permit for discharge to groundwater from the lagoons, or terminate dyehouse operations. B&M took the latter option. B&M was also required to determine the extent of soil and

groundwater contamination.

The environmental assessment of soil and groundwater showed that the soils and sludges from the lagoon contained chromium, lead, zinc, VOCs and base/neutral compounds at concentrations above background levels.

October 1986 Three underground storage tanks (USTs) were removed: one 2000 gallon gasoline tank, one 3,000 gallon wool oil tank, and one 250 gallon diesel fuel tank.

May 1987 The Norfolk Board of Health held a public hearing to review the proposed plans for on site composting of lagoon sludges and soils prior to landfill disposal.

July 1988 The Norfolk Board of Health issued a Site Assignment pursuant to Massachusetts General Laws Chapter 111 Section 150A for pilot sludge and soil composting.

December 1988 The "Interim Report on Lagoon Closure at Buckley and Mann, Inc. Norfolk, MA, December 1988" prepared by CDM described interim remedial actions undertaken in 1987 and 1988. The ditch from the dyehouse to Lagoon #1 was cleaned of partially decayed fiber and leaves, and then backfilled with clean soil from an on-site sand bank. The excavated material was stockpiled 50 yards south of Lagoon #1. The drainage of the groundwater spring upwelling in Lagoon #3 was improved to divert the water away from Lagoons #1 and #2. CDM proposed bench-scale experiments for aerobic treatment of soil to biologically oxidize dye carrier compounds. B&M hand scraped a thin layer of a blue, oily material mixed with sand from the surface of Lagoon #1 and stored the material in 11 drums. Additional soil from Lagoon #1 was stockpiled near the Lagoon.

January 1989 A complete set of reports on the proposed lagoon closure plan was sent to the DWPC for review. The DWPC did not respond to a request for input on the closure plan.

March 1990 CDM determined that the composting process proposed in 1987 was no longer feasible because auto-degredation had decreased the concentration of organic matter in soils in the bottoms of Lagoons #1 and #2 to less than 1 percent by weight.

October 1990 CDM prepared the "Status Report and Revised Lagoon Closure Plan for Buckley and Mann, Inc. MA, October, 1990". Bench-scale experiments conducted in 1989 and 1990 demonstrated that Total Petroleum Hydrocarbons (TPH), Base/Neutral (B/N), and dye carrier compounds could be biologically degraded over a 12-month period under aerobic conditions. CDM recommended that TPH contaminated soils should be excavated from the bottoms of Lagoons #1 and #2, stockpiled above the high groundwater elevation, and fertilized. Natural biological degradation would be allowed to occur until TPH level were reduced to less than 300 mg/kg, the guideline level for on-site re-use of soils as described in MDEP Policy #WSC-400-89, "Management Procedures for Excavated Soils Contaminated with Virgin Petroleum Oils".

Analyses of soil excavated from Lagoon #1 in 1988 (20 cubic yards), and from the trench in 1987 (200 cubic yards) showed that the samples contained 2,600 and 440 mg/kg TPH, respectively.

August 1991 CDM sampled and analyzed soils from Lagoons # 1 and #2, and the soil excavated from Lagoon #1 in 1988 for TPH and chromium. TPH concentrations were 350 mg/kg

in soils from Lagoon #1; 1,320, 590, 740, and 440 mg/kg in soils from Lagoon #2; and 3,350 mg/kg in the soil excavated from Lagoon #1 in 1988. Chromium concentrations were 210 mg/kg in soils from Lagoon #1; 140 mg/kg in soils from Lagoon #2; and 2,440 mg/kg in the soil excavated from Lagoon #1 in 1988.

The water in the Lagoons #1 and #2 was clear, and supported an active frogs populations.

April 1992 — B&M elected to enter the MCP process and prepared a Preliminary Site Assessment, an Interim Site Classification Form and a Waiver Application Form to the MDEP for MCP non-priority site classification.

5.0 Discussion of Environmental Sampling and Analytical Results

Analytical results from soil and groundwater sampling at B&M are summarized in the three reports and one, 1991 sampling round listed below. The site plan in the enclosed 1986 Report shows the location of monitoring wells, soil borings, and inferred groundwater flow directions.

1) Report in an Environmental Site Assessment at Buckley and Mann, Inc., Norfolk, MA, July 1986.

2) Interim Report on Lagoon Closure at Buckley and Mann, Inc., Norfolk, MA, December 1988.

3) Status Report and Revised Lagoon Closure Plan for Buckley and Mann, Inc., Norfolk, MA, October 1990.

4) Sampling and analysis of Lagoon #1 and #2 soils and excavated soil piles for TPH and chromium, performed August 1991. The analytical results are shown in

the Appendix to this report.

Based on the results presented in the above reports, there are five areas on the site with contaminant concentrations above background levels: 1) the soils in the bottom of the Carbonizer Lagoon; 2) the Carbonizer residue disposal area; 3) the soils in the bottom of Lagoon #1; 4) the soils in the bottom of Lagoon #2; and 5) excavated soils stockpiled to the west of Lagoon #1.

Soil Analytical Results

Table 1 summarizes contaminant levels detected in soil and sediment above tentatively proposed MDEP Reportable Concentrations for metals and TPH as reported in the February 1992 issue of Massachusetts EnvironManagement Report. No Reportable Concentrations were published for Base/Neutral (B/N) compounds.

Based on results compiled in Table 1, the primary contaminants of concern in the sediments from Lagoons #1, #2 and the stockpiled material are chromium, and organic compounds in the TPH and B/N extracts. Based on the soil sampling in 1986, the principle contaminants in the Carbonizer Soils are chromium, lead, and zinc.

Groundwater Analytical Results

Groundwater was sampled in 1986 for conventional water quality parameters, metals and VOCs. According to the 1986 report, the only parameter that was above background concentrations was Chemical Oxygen Demand (COD). Monitoring well MW-2, upgradient of the lagoons contained COD at 50 mg/L. Monitoring wells MW-6 and EW-3, downgradient of the lagoons, contained COD concentrations of 40 and 140 mg/L, respectively. CDM suspected that the COD in the downgradient wells was unrelated to the lagoons, but rather was caused by the oxygen demand of organic compounds associated with swampy conditions. There was no explanation for the COD in the upgradient well, which was an area unaffected by industrial operations or the

TABLE 1

SUMMARY OF ANALYTICAL RESULTS ABOVE MDEP REPORTABLE CONCENTRATIONS FOR SOIL
(mg/kg)

Location Sample ID and (date)	Cr	Pb	Zn	TPH	Total B/Ns	Total VOCs	Ref. No.*
Carbonizer Lagoon SS-5 (1986)	450	670					1
Carbonizer Residue Disposal Area SS-1 (1986)	1000	1200	8200				1
Lagoon #1 Soils SS-4 (1986)	270				92		1
SS-4A (1986)	1300				172	4.2	1
(1988)				210			2
1A+1B (1991)	210			350			4
Lagoon #2 Soils SS-3 (1986)	430						1
2A+3B (1991)				1320			4
2B (1991)				590			4
3B (1991)				740			4
4A+4B (1991)				440			4
Trench soils piled W. of Lagoon #1 (1990)				440	9		3
Lagoon #1 soils piled W. of Lagoon #1 (1990)				2600	132		3
5 (1991)		2440		3350			4
MDEP Reportable Concentration	100	200	5000	300			

* References numbers listed in the text at the beginning of Section 5.0.

lagoons.

Surface Water Analytical Results

In 1986, surface waters were sampled and analyzed for conventional water quality parameters, metals, B/Ns and VOCs. These samples were collected at a time shortly after the dyehouse operations ceased. Sampling sites included: 1) upstream and downstream of the site along Mill River; 2) Lagoon #1 and #2; and 3) Boiler Blowdown and non-contact cooling waters. The only results above background concentrations and/or detection limits were the chromium in Lagoon #1, at 0.72 mg/L and the base/neutral compounds in Lagoon #2, which totaled 1.16 mg/L. During a site visit in August, 9, 1991, CDM noted that the water in Lagoons #1 was clear, and Lagoon #2 had an algal film. This was a considerable improvement from 1986, when the Lagoons were black.

Groundwater Hydrology

Water levels in several monitoring wells screened in surficial aquifer, one well in the contiguous bedrock, and surface water were measured in March 1986. Measurements are shown on the 100 scale, site plan from the 1986 Report. From these measurements, the groundwater was predicted to flow toward the Tail Race from the west from Lagoons #1 and #2, and toward the Mill River and confluence of the Tail Race and Mill River from the direction of the Carbonizer Lagoon. The estimated hydraulic gradient was site ranged between 0.006 and 0.01 feet per foot.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations listed below are based on CDM's review of available historical records and the site investigations summarized in this report.

1) The available reports and records indicate that concentrations

above background levels of metals, base neutral compounds and TPH in the soils at the site originate from the discharge of wastewater and disposal of wastes related to the dyehouse and carbonizer operations which were terminated in 1986 and 1965, respectively.

2) The available data indicate that lagoon areas are in a zone where groundwater discharges to the River and the Tail Race, not in a groundwater recharge zone. The limited groundwater contamination immediately adjacent to the lagoons does not pose a hazard to public or private water supply wells.

3) B&M should proceed with remediation as described in CDM's October 1990 report, in accordance with the procedures in the MCP.

4) B&M should submit the application forms and fees to enter the MCP process, and request a Waiver from direct review and approval by the MDEP of each MCP step.

6.0 LIABILITY LIMITATIONS

The conclusions presented in this report are professional opinions based solely on CDM's interpretation of visual observations of the site and vicinity, available historical information and documents, and the available analytical data. This report is intended for the sole use of Buckley and Mann, Inc. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users. Any use or re-use of this document or the findings, conclusions, or recommendations presented is at the sole risk of the said user.

The opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which CDM is not aware and has not had the opportunity to evaluate.

APPENDIX A: SAMPLING AND ANALYSIS AUGUST 1991

MEMORANDUM

SUBJECT: Buckley & Mann lagoon closure

DATE: 9 Aug 91

PROJECT NO: 1121-6

TO: Files

FROM: Bob Dangel

Dan Murphy and I visited B&M to check the current condition of the lagoons and plan the proposed next step, further aerobic treatment of the lagoon subsoils.

The summer had been dry.

Lagoon #1 contained about 12" to 18" of water. The water was remarkably clear, and the bottom was visible as clean sand, with leaves around the edges. There were a lot of frogs. We took two soil samples with a hand shovel from below the water at the edges of the laggon. The soils were sand, with black septic sludge mixed in, septic odor and possibly an oily odor. A slight sheen appeared on the surface when the soils were disturbed.

Lagoon #2 was dry on the half nearest Lagoon #1 for the first time in about 6 years, with a few low spots filled with a few inches of black, watery sludge. There was grass growing in the higher areas, which had been out of the water for a while. The surface of the soils looked normal, but soil samples from below the surface in this part of the Lagoon were black sludge sand with a septic odor and a hint of oily odor. The remainder of Lagoon #2 contained water with a bright green algae film. There were also a lot of frogs. A soil sample taken from below the water surface in the end of the Lagoon farthest from Lagoon #1 had the same black septic sand with similar odors to the other samples. Some of the Lagoon #2 soils had traces of the blue color which was observed in a thin film layer on the top of the Lagoon #1 subsoils when that lagoon was hand scraped in 1988.

Lagoon #3 was dry. The soils in this Lagoon were tan, with no black or septic conditions.

The soils excavated from Lagoon #1 in 1988 and piled on plastic at that time were grey, with a faint odor. There was no vegetation growing on the pile, with the exception of a few blades of grass just starting. The pile was initially covered with plastic, but has been uncovered for about a year. Dan Murphy suggested that there may be something in the soil which has inhibited growth. (I suggested chrome.)

We made a preliminary layout along the road next to the lagoons for the new soil pile to be made on plastic from scraping Lagoon #2.

A total of nine soil samples were collected (see the attached sketch for locations):

Sample	Lagoon	Area	Depth
1A	1	nw corner	below water,
1B	1	ne corner	below water,
2A	2	s end	surface to 4"
2B	2	s end	4 to 8"
3A	2	middle	suface to 4"
3B	2	middle	6 to 8"
4A	2	n end	surface to 4"
4B	2	n end	8 to 12"
5	(1)	1988 pile	composite of 4 to 8"

I proposed to analyze these samples for TPH and chromium, but to composite some of them initially to reduce laboratory costs.

I recommended to Steve and Dick Mann that as soon as the laboratory results were in, they proceed to hire a front end loader to scrape Lagoon #2 and pile the soil on a liner under Dan Murphy's direction. CDM would provide a cost estimate for this work, to include excavation, materials and engineering, asap.

B&M will give CDM a budget for the laboratory anaylses.

In a telcon on 8/12/91 I requested and Dick Mann concurred that CDM would analyze 6 samples for TPH and 3 for total chromium for an estimated cost of $915.

I selected the followig composite combinations to give an idea of the vertical and well as horizontal distribution of TPH and chromium.

TPH:

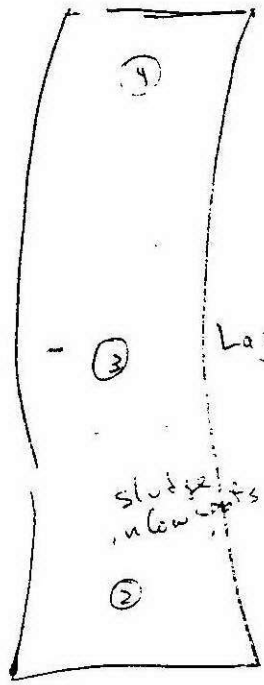
1A & 1B
2A & 3A
2B
3B
4A & 4B
5

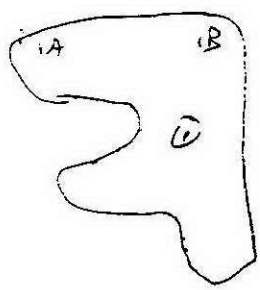
Cr:

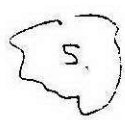
1A & 1B
2A & 3A & 4A
5

CAMP DRESSER & McKEE CLIENT RTI JOB NO. COMPUTED BY 12AU
PROJECT Lagoon Closure DATE CHECKED DATE 8/9/95
DETAIL CHECKED BY PAGE NO.

Sample*	Depth	Notes
1A	Surface, under 8" water	Black Sand, Septic
1B	Surface, under 16" water	" " slight sheen after disturbing sed
2A	Surface - 4"	Black/organic/grass. Septic
2B	4" - 8"	Black-tan. Faint septic
3A	Surface -4"	Black, Septic
3B	6" - 8"	Tan, Black
4A	Surface -4"	~~3-12"~~ Black
4B	3 - 12"	"
5*	4-8"	







~~5B~~

Analyze

1 : 1A+B
2 · 2A + 3A
3 2B
4 3B
5 · 4A + B
6 5

* 915.-

CDM

environmental engineers, scientists, planners, & management consultants

CAMP DRESSER & McKEE INC.
Laboratory Services

Riverside Technology Center
840 Memorial Drive
Cambridge, Massachusetts 02139
617 354-4448

22-AUG-1991

TASK NO: 91081202
JOB NO: 9960-198
LAB NOS: 37912-37918

CERTIFICATE OF LABORATORY ANALYSIS -

CAMP DRESSER & McKEE INC.
RIVERSIDE TECHNOLOGY CENTER
840 MEMORIAL DRIVE
CAMBRIDGE, MA. 02139
(617) 354-4448

MASS. CERTIFICATION I.D. MA012

CLIENT:	BUCKLEY & MANN
REPORT TO:	B. DANGEL 10CC CAMBRIDGE MA
REFERENCE/P.O. #:	1121-6-RT-GEAD
DATE SAMPLES COLLECTED:	09-AUG-1991
DATE SAMPLES RECEIVED:	12-AUG-1991
SAMPLE DESCRIPTIONS:	SEE ATTACHED SHEET

The undersigned hereby attest to the fact that the information contained in this report is, to the best of their knowledge, complete and accurate.

James F. Occhialini 8/22/91
James F. Occhialini DATE
Laboratory Manager

Peter T. Maynard 8/22/91
Peter T. Maynard DATE
Assistant Laboratory Manager

CERTIFICATION OF LABORATORY ANALYSIS (cont)

22-AUG-1991

SAMPLE #	CLIENT I.D.	SAMPLE TYPE
37912	1A+~~2A~~1B	SOIL
37913	2A+3A	SOIL
37914	2B	SOIL
37915	3B	SOIL
37916	4A+4B	SOIL
37917	5	SOIL
37918	2A+3A+4A	SOIL

CDM ANALYTICAL LABORATORY

TOTAL PETROLEUM HYDROCARBONS REPORT
EPA Method 9071/418.1

Project: BUCKLEY & MANN
Task: 91081202

Matrix: Soil
Units: mg/kg dry

Prepared: 08/13/91
Analyzed: 08/15/91

ANALYTE	REPORTING LIMIT	CLIENT ID:	1A+1B	2A+3A	2B
		CDM ID:	37912	37913	37914
TPH	25		350	1,320	590

ANALYTE	REPORTING LIMIT	CLIENT ID:	3B	4A+4B	5
		CDM ID:	37915	37916	37917
TPH	25		740	440	3,350

ND = Not detected at specified detection limit.

APPROVED BY

CDM ANALYTICAL LABORATORY

TOTAL PETROLEUM HYDROCARBONS
EPA Method 9071/418.1

BLANK DATA

Matrix: Soil
Units: mg/kg dry

Prepared: 08/13/91
Analyzed: 08/15/91

ANALYSIS DATE	REPORTING LIMIT	CDM METHOD BLANK
08/15/91	25	ND

NOTE:
Quality Control results are representative of sample analyzed as part of a laboratory batch.

APPROVED BY

CDM ANALYTICAL LABORATORY

TOTAL PETROLEUM HYDROCARBONS
EPA Method 9071/418.1

DUPLICATE RECOVERY

Matrix: Soil
Units: mg/kg dry

Prepared: 08/13/91
Analyzed: 08/15/91

CDM ID	REPORTING LIMIT	SAMPLE RESULT	DUPLICATE RESULT	- RPD
37915	25	740	780	5

NOTE:
Quality Control results are representative of sample analyzed as part of a laboratory batch.

APPROVED BY

CDM ANALYTICAL LABORATORY

TRACE METALS
EPA Method 6010/7000 Series

Project: BUCKLEY & MANN
Task: 91081202

Prepared: 08/12/91
Analyzed: 08/13/91

Matrix: Soil
Units: mg/kg dry

ANALYTE	REPORTING LIMIT	CLIENT ID:	1A+1B	5	2A+3A+4A
		CDM ID:	37912	37917	37918
CHROMIUM	2.0		210	2,440	140

ND = Not detected at specified detection limit.

APPROVED BY

REQUEST FOR LABORATORY SERVICES
RECORD OF SAMPLE RECEIPT

CLIENT: Buckley & Mann PROJECT NAME: ____ PROJECT/P.O. #: 1121-6-RT-GEAD

REPORT TO: (NAME) B. Dangel (ADDRESS) CDM-10CC (PHONE #) 252-8000

INVOICE TO: (NAME) B. Dangel (ADDRESS) CDM-10CC

DATE SAMPLED: 09 / AUG / 91 (DAY MONTH YEAR) by: B. DANGEL, D. MURPHY

DATE SAMPLES RECEIVED: 12 / AUG / 91 (DAY MONTH YEAR)

1995 (...) 98 TASK #: 9108/2023 DATE REPORT DUE: 2 weeks

STANDARD LABORATORY TURNAROUND TIME IS 3 WEEKS FROM DATE OF RECEIPT. ACCELERATED TURNAROUND MAY BE ASSESSED A SURCHARGE.

REQUESTED TURNAROUND TIME: ____ SURCHARGE ASSESSED: ____ % CONFIRMED BY: ____

SAMPLE I.D.	SAMPLE CONTAINER	SAMPLE TYPE**	CDM LAB # (For CDM Lab Use Only)	ANALYSIS REQUESTED *	REMARKS (For CDM Lab Use Only)
1A + 1B	500ML JAR	SOIL	37912	TPH, TOTAL Chromium	
2A + 3A	500ML JAR	SOIL	37913	TPH	
2B	↓	↓	37914	TPH	
3B			37915	TPH	
4A + 4B			37916	TPH	
5			37917	TPH, Total Chromium	
2A + 3A + 4A	↓	↓	37918	Total Chromium	

★ See Attached Memo

Composites by S. Willis 8/12/91 ~2:15 PM

Approximated by Volume

* N/C for Compositing

DE 8/21/91

* PLEASE INDICATE ANY SPECIAL REQUIREMENTS, i.e., LOW DETECTION LIMITS, SPECIFIC METHODOLOGY, ETC.

** SAMPLE TYPE: SURFACE WATER (SW), GROUNDWATER (GW), DRINKING WATER (DW), WASTEWATER (WW), SOIL, SLUDGE, SEDIMENT, OTHER (PLEASE SPECIFY)

Rec'd Via E-Mail 8/12/91 2:00PM — RELINQUISHED BY / DATE / TIME

Sue Willis 8/12/91 2:00PM — REC'D FOR LABORATORY BY / DATE / TIME

WHITE & PINK: CDM LABORATORY COPY

BLUE: CLIENT COPY