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PITT-04-1-003

August 24, 2001

Project Number 6966

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Joel Sanders, Code ES327
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order 0003

Subject: Naval Industrial Ordnance Plant, Fridley, Minnesota
Restoration Advisory Board Minutes - Meeting #22

Dear Joel:

Your RAB co-chairs, Richard Harris and Joel Sanders, invite you to the next RAB meeting, scheduled for Thursday, September 13, 2001, at NIROP Fridley. The meeting should last a little more than one hour. Please see the attached agenda.

Please note that the meeting location at NIROP has changed. The RAB meeting is now being held at the Navy's new conference room. The Navy's new conference room is located just outside the RAB's normal meeting space. Please see the attached map.

Enclosed for your use are the minutes from the Restoration Advisory Board Meeting #21, held at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota on April 26, 2001. These final minutes address review comments on draft minutes provided to Tetra Tech NUS by the Navy. Other copies of these minutes have been distributed according to the attached Distribution List.

Persons receiving copies of these meeting minutes are requested to note that the next Restoration Advisory Board meeting will be held at the **Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, on Thursday, September 13, 2001 at 8:30 am.** Please note the new, earlier, start time.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark Sladic'.

Mark Sladic, P.E.
Task Order Manager

MS/kf

Enclosures

c: John Haukaas, City of Fridley, Dept. of Public Works
Stephen Hoffman, Naval Sea Systems Command
David Douglas, MPCA
Tom Bloom, USEPA - Region V
Doug Hildre, United Defense LP
Michael Flaherty, Metropolitan Council Environmental Services
Robert Hutchinson, Environmental Services, Anoka County Courthouse
Adam Kramer, Minneapolis Water Works
LTC Joel Zejdlik, Defense Contract Management Office - Minneapolis
Gary L. Brisbin, RAB Member
Laura Schmidt, RAB Member
Richard Harris, RAB Member
Craig S. Gordon, RAB Member
Bob Boesell, RAB Member
John Flora, RAB Member
Gen Peterson, League of Women Voters
Venky Venkatesh, CH2MHill

**NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT FRIDLEY
RESTORATION ADVISORY BOARD MEETING #22**

SEPTEMBER 13, 2001 8:30 AM

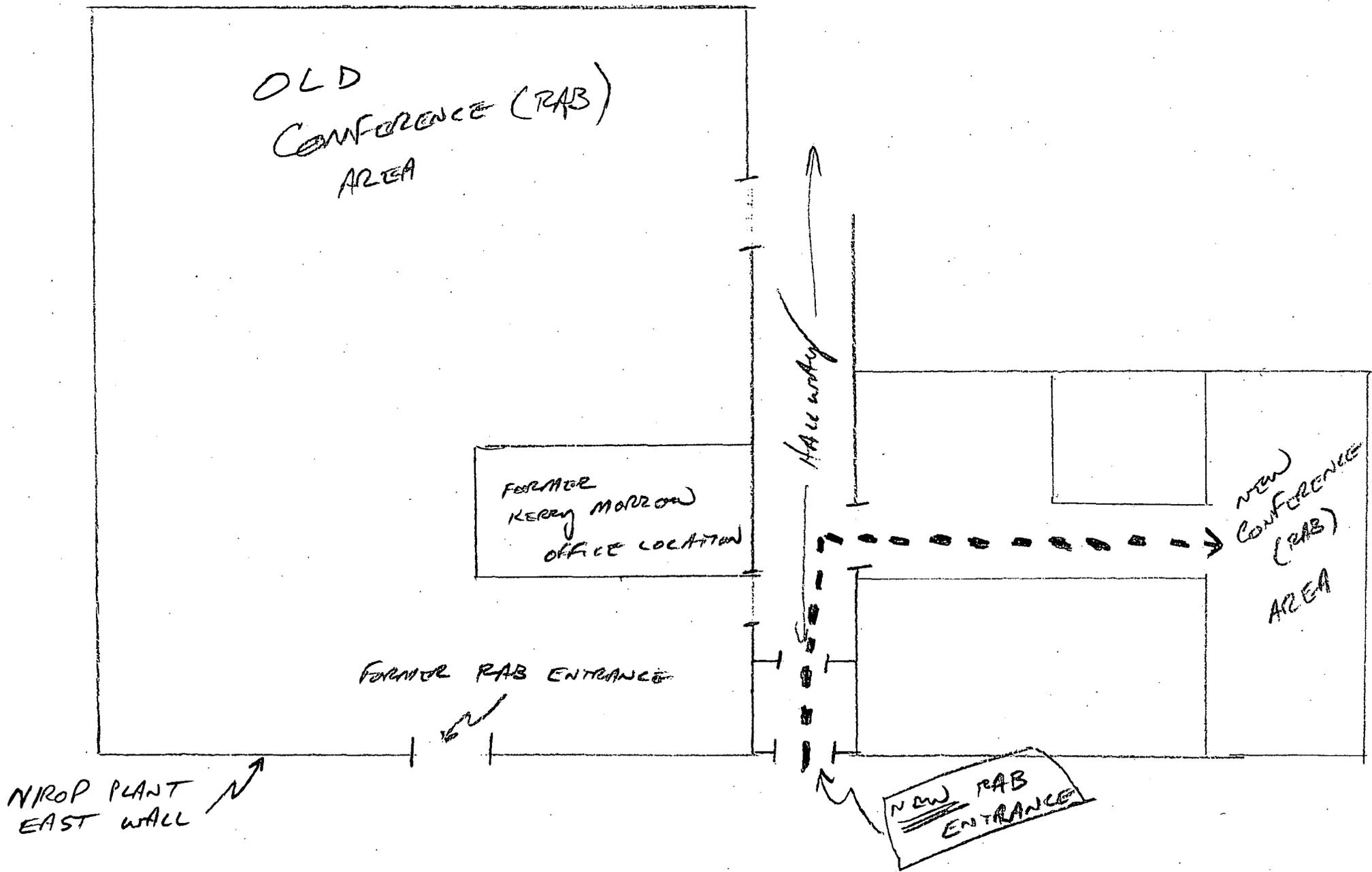
AGENDA

1. Introduction
2. Revisions to Minutes of RAB Meeting #21
3. Actions Since Last Meeting

NAVY

- a. **Operable Unit #1 – Groundwater**
 - Status of Groundwater Treatment Facility Maintenance and Operation – Brandon Juran; BayWest
 - Update for New Pumping Wells Proposed Construction and Startup – Venky Venkatesh; CH2MHILL
 - Update for Vegetable Oil Pilot Test Plans and Schedule – Venky Venkatesh; CH2MHILL
 - Team using the DQO process to develop long term Remedial Action Work Plan (sampling plan); Mark Sladic; TtNUS
 - b. **Operable Unit #3 – Soils Under the NIROP Plant**
 - Update Completion of Outstanding Reports - Mark Sladic; TtNUS
4. Status of sale of the Property
 5. Other Issues/Comments
 - a. Partnering Efforts
 - b. Future Meeting Dates

PLEASE NOTE THE RAB AGENDA IS SUBJECT TO CHANGE.



MAP TO RAB MEETING LOCATION

Minutes of Meeting
Restoration Advisory Board Meeting #21
April 26, 2001

Naval Reserve Ordnance Plant
Fridley, Minnesota

Restoration Advisory Board (RAB) meeting #21 was held at the Naval Industrial Reserve Ordnance Plant (NIROP), Fridley, Minnesota, on Thursday, April 26, 2001, at 9:00 AM. A copy of the attendance sheet is attached (Attachments 1). Each of the attendees' affiliation is identified on the attendance sheet.

1. Introduction

Joel Sanders and Mr. Richard Harris opened the meeting at 9:00 AM.

2. Minutes of RAB Meeting #20

The minutes were accepted by vote.

3. Actions Since Last Meeting

Operable Unit #1 - Groundwater: Brandon Juran, with BayWest, provided an Operation and Maintenance summary for the GWTF, since the last RAB meeting. See Attachment 2.

Mr. John Haukaas asked Brandon if there was any downward trend in contaminant concentration. Brandon said that he works mostly with the treatment plant influent. The influent concentrations move around a good deal and Brandon has not observed a trend.

Mark Sladic, with Tetra Tech, said that when each year's Annual Monitoring Report is developed, it is evident that there are downward trends in contamination in many individual wells.

Mr. Richard Harris asked Brandon about what might have caused his mention of foam causing an errant high-water-level alarm in the treatment system. Brandon replied that he wasn't sure, but it could have been related to the recent extraction well pump testing.

Mark Sladic advised the RAB that the Partnering Team is now reviewing the Draft 2000 Annual Monitoring Report. The document summarizes site-wide groundwater sampling results from the preceding year. The document compiles conclusions and recommendations, which typically provide the Partnering Team a roadmap for future years, so it is important to get the Team's buy-in.

Tom Bloom, with EPA, reviewed the process that resulted in the Remedial Design Fact Sheet provided to RAB Members. Tom summarized the Fact Sheet, and explained the implications for NIROP's groundwater remediation that are detailed inside.

Venky Venkatesh, with CH2MHill, said that they are working to finalize the workplan for the vegetable oil pilot study in Anoka County Park (ACP). Venky said that they are working with another contractor, Parsons, who has done this work at other sites. Currently, the schedule for injecting the vegetable oil is dependent on finalizing the workplan and securing access agreements to work in ACP. Based on the results from ACP, this same remedy could be used full-scale in the park and under the building, although no decisions will be made until evaluating the ACP pilot test results. See Attachment 3.

Mr. Harris asked if water samples would be collected before and after the pilot study, and Venky replied yes.

Mr. Harris asked how consistent the treatment plant is for treating 750 gpm, and Venky said that the plant should continue to operate efficiently at 750 gpm. Mr. Harris asked if there was any idea how long the plant would need to be in operation. Tom Bloom said no. The Partnering Team is currently developing an exit plan, and how to evaluate if the plant is successful long-term. Mr. Harris asked if there was any date yet. Joel said there is no date yet, but the Navy will continue to pump and treat until we know we're protective.

Tom Bloom said that in the future we can have an Alternate Concentration Limit (ACL) for cleanup if we can prove that we've done the best we can, and further operation of the plant isn't providing any more benefit.

Mr. Harris said that in a recent conversation with a county commissioner, he was asked when the Navy would be done. Tom said that groundwater contamination is not something you can easily make these kinds of predictions about. Tom suggested that Mr. Harris invite the commissioner to the next RAB meeting.

Mr. Harris asked, regarding the vegetable oil, do you think we'll have measurable results within a year. Venky said yes, in our target area. Mr. Harris asked how big was the target area. Joel replied about twenty feet by thirty feet. Mr. Harris asked if the results from the target area will really provide useful information about application of this technology across the site, and Venky said yes. Mr. Harris said that he understood that one step in the pilot test produced vinyl chloride, and how was that going to be addressed. Venky said that three contingency wells were being installed to check for vinyl chloride, and chemical can be injected to address it if it is detected. Tom noted that if use of this contingency becomes necessary, then this would preclude any site-wide application of the technology.

Joel offered to provide copies of the pilot test workplan to interested RAB members, and several RAB members requested these.

Operable Unit #3 - Soils Under NIROP Plant: Mark said that the Partnering Team was concluding final details in combining the OU3 risk assessment with information from another risk assessment for OU2. The integration has been tricky, but by combining the two, the Team can best evaluate remedies for the entire site.

4. **Plant Sale.** John Aubert, NAVSEA, said that UDLP and GSA recently reached a 'handshake' agreement on the plant sale to UDLP - but we've been this far before. Mr. Harris said that he had read in the newspaper that the Army was considering doing away with the Crusader. John said that this was the finding from one of three committees. At least one other committee suggested keeping it.
5. **Other Issues/Comments**
 - a. **Partnering:** The team continues regular partnering meetings to keep the project moving. The meetings have been in occurrence since Fall 1996.
 - b. The next meeting is tentatively scheduled for September 13, at 8:30 AM. RAB members, and others on the mailing list, will be notified well in advance and provided with a meeting agenda.

NIRAP FRIDLEY RAB APRIL 26

NAME	PHONE	AGENCY
MARK SLADIC	412-921-8216	TEHRA TECH
Larry Cole	612-661-4923	Mpls Water
B. Venky Venkatesh	216-623-0402, ext 13	CH2MHILL
Joe Stander	843-820-5562	SOUTH DIV
Dave Douglas	651-296-7818	MPCA
Thomas Bloom	(312) 886-1967	USEPA
Jon Haukaas	763-572-3550	FRIDLEY
Brandon Juran	763-572-7263	Bay West
Rud Aubert	909-620-0459	NAUSEA
AL DIETRICH	909-620-0469	NAUSEA

JOHN FLORA

573 Rio Creek Terrace
RICE

Trudy, MN 55432

NIROP Problems and Solutions

- Extraction well AT-4 stopped running on October 5, 2000. It was restarted, but shut down again October 8. It was allowed to sit for a week and was restarted on October 16 and was running fine.
- In November during well install work, the system was used to treat development and pump test water. On a few occasions the addition of this water corresponded with high level alarms in the air strippers. This water when treated created foamy bubbles (similar to dish soap). In the future when they would discharged extra water the fourth air stripper was turned on.
- During two of the colder days the connection for the blower intake broke loose.
- During the final week in December extraction well AT-4 faulted out. It was allowed to sit for a couple of weeks but failed to run again. The electrical readings were normal. It was determined since this well will be abandoned fixing the pump would not be necessary.
- In January, a United Defense fork lift operator ran into the pipe for AT-1A breaking it. United Defense cleaned up the spill and fixed the pipe. AT-1A was restarted.
- The guards called Bay West to respond to a flashing red light on building 52/53. There was a problem with the level sensor for sump-502. The sensor was calibrated and the relays were reset based on the new calibration. The sensor was checked for proper operation.
- The pump in extraction well AT-5B faulted on March 16. Bay West checked the electrical readings for the pump motor and found one of the legs was drawing more current than normal. Tony from Renner came out and checked the motor. It was working fine. Tony pointed out a junction box where they had problems before. The junction box sits in the ground at ground level. The box was full of water causing a short in the line to AT-5B. Collisys repaired all the lines in the box with water tight splices.
- On March 21 there was a blower alarm that shut down the system at 4:39 a.m. Bay West responded in a thick dense fog. The blowers were having problems during the restart procedures. It was suspected that the fog was affecting the blowers. The system was let off until 8:00 a.m. that morning and was restarted without problems.



ATT 2
2/6

**NIROP Fridley, MN Ground Water Treatment Facility
Operations and Maintenance Summary**

Extraction Wells
(thousands of gallons)

Total treated: 670,000,000 gallons
TCE removed: 3,873 lbs.

Treatment System
(thousands of gallons)

	1A	2	3A	4	5A	5B
Nov '98	2,224	828	9,209	2,131	6,151	3,141
Dec '98	2,188	1,042	9,497	2,016	6,208	3,161
Jan '99	2,697	1,490	11,775	2,425	7,524	3,807
Feb '99	2,356	1,557	9,923	1,987	6,605	3,309
Mar '99	2,604	1,646	10,448	2,082	7,315	3,658
Apr '99	2,528	1,676	10,110	1,981	7,077	3,540
May '99	2,615	1,709	10,460	1,676	7,322	3,668
Jun '99	2,502	1,103	10,013	1,502	6,667	3,621
July '99	984	1,322	10,479	1,509	6,271	4,173
Aug '99	1,538	1,116	9,610	1,444	5,275	3,848
Sept '99	2,024	1,095	10,110	1,518	5,531	1,027
Oct '99	2,096	1,288	10,476	1,332	6,710	3,431
Nov '99	2,026	1,030	7,787	1,013	4,194	3,219
Dec '99	485	750	2,426	243	4,430	2,258
Jan '00	402	404	4,837	798	3,614	1,524
Feb '00	1,947	979	2,824	1,951	6,897	3,892
Mar '00	2,222	825	13,331	2,180	7,751	4,418
Apr '00	1,889	688	11,333	1,728	6,611	3,778
May '00	2,093	1,285	12,557	1,484	7,323	4,178
Jun '00	2,042	290	12,167	931	7,147	4,084
Jul '00	2,072	0	12,421	2,072	7,253	4,145
Aug '00	2,093	0	12,554	591	7,324	4,185
Sep '00	1,844	0	11,114	1,407	6,452	3,707
Oct '00	2,101	0	12,611	1,261	7,266	4,204
Nov '00	2,026	0	12,159	1,713	6,369	4,046
Dec '00	2,062	0	12,603	989	6,328	4,201
Jan '01	576	0	12,421	0	6,217	3,910
Feb '01	1,884	0	10,848	0	5,653	3,501
Mar '01	2,066	0	11,100	0	6,191	2,897
Total	56,186	22,123	297,203	39,964	185,676	102,531

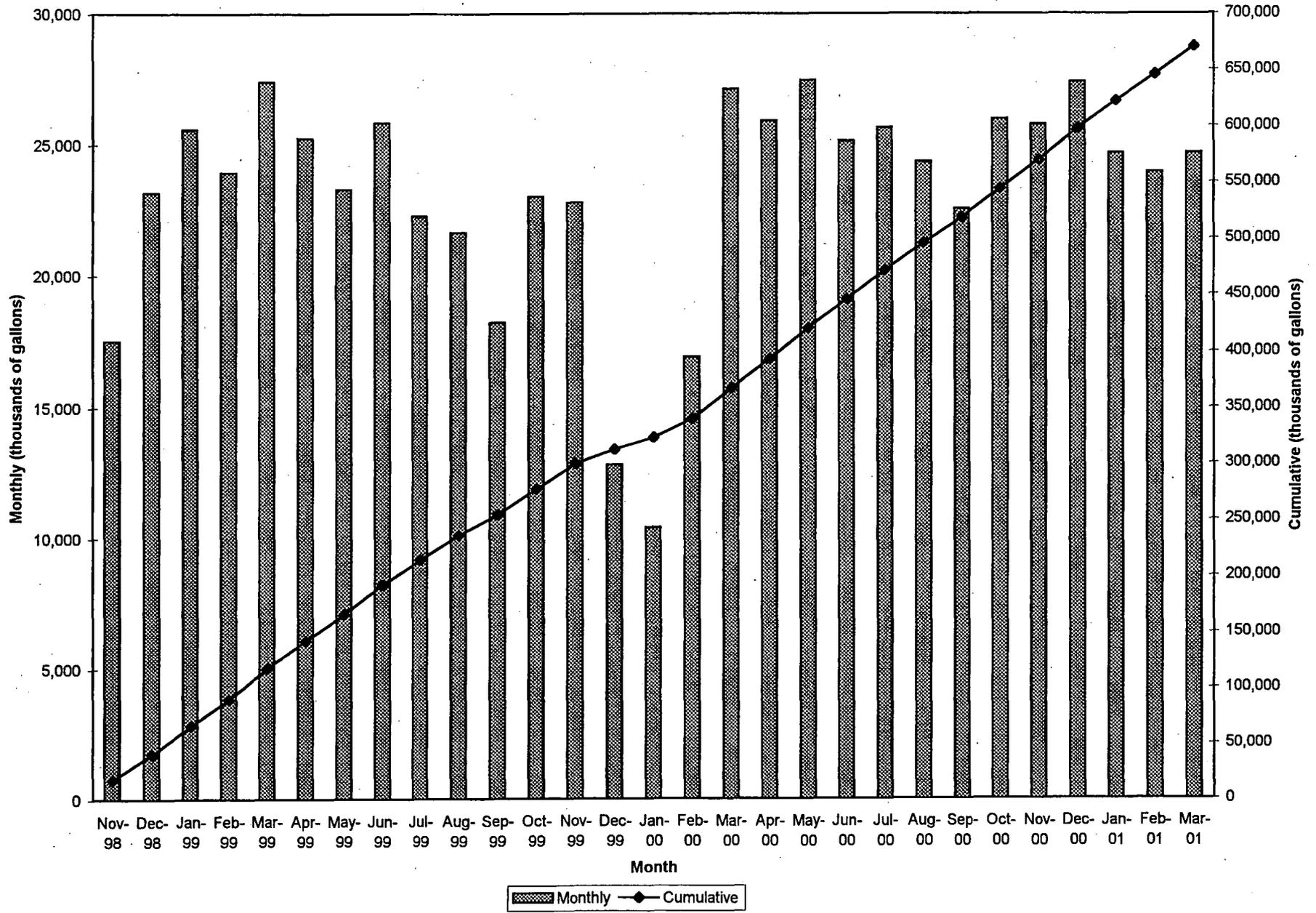
	Sanitary	Storm
Nov '98	17,201	
Dec '98	7,364	16,103
Jan '99		28,172
Feb '99		23,780
Mar '99		25,745
Apr '99		25,257
May '99		25,695
Jun '99		23,364
July '99		22,880
Aug '99		20,788
Sept '99		18,302
Oct '99		24,978
Nov '99		20,966
Dec '99		12,144
Jan '00		11,180
Feb '00		16,943
Mar '00		27,086
Apr '00		24,214
May '00		27,458
Jun '00		25,136
Jul '00		25,637
Aug '00		24,341
Sep '00		22,559
Oct '00		25,955
Nov '00		25,759
Dec '00		27,404
Jan '01		24,666
Feb '01		23,956
Mar '01		24,696
Total	24,565	645,164

Extraction Well Flowrates
(gallons per minute)

Well	Ideal	4/24/01	% Ideal*
1A	50	37	74
2	40	0	0
3A	280	248.8	89
4	47	0	0
5A	168	157.8	94
5B	88	88.6	100

* Action level is 60% Ideal

NIROP FRIDLEY GWTF TOTAL TREATED FLOW



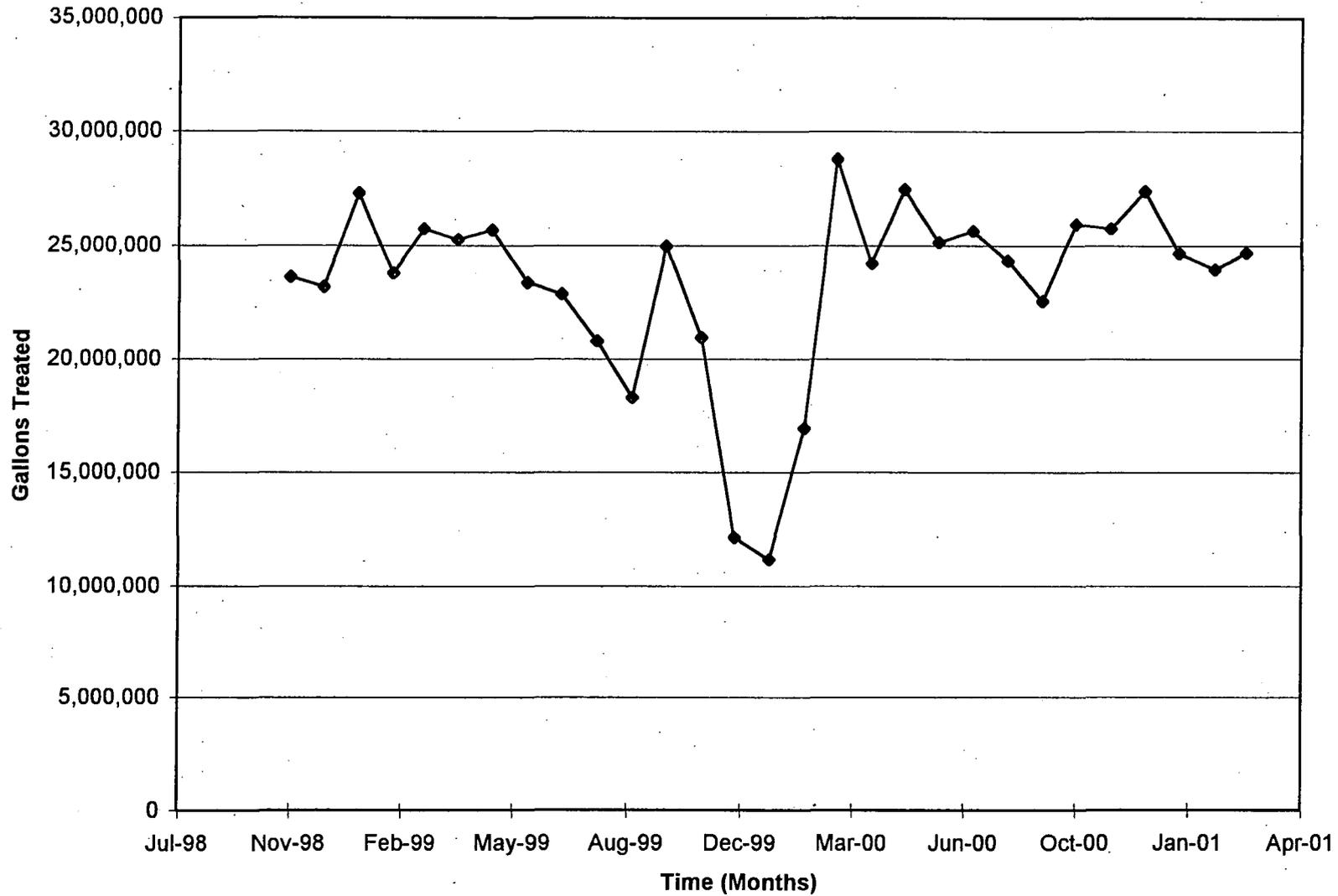
O&M Start Date: 11 November 1998

FIGURE 2

ATT 2
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NIROP Fridley

Gallons Treated vs. Time



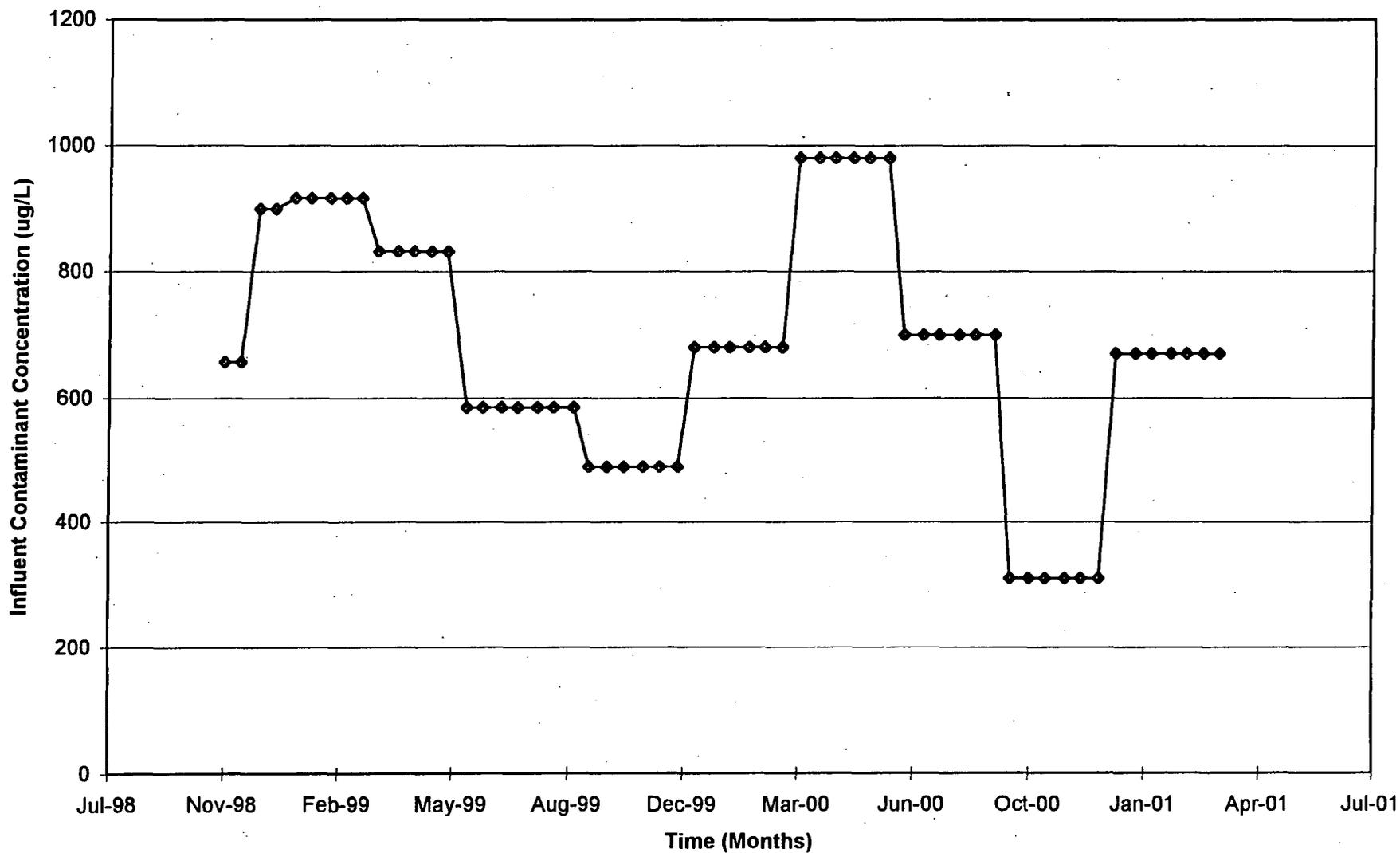
System Start Date: 11 November 1998

Figure 4

ATT 2
4/6

NIROP Fridley

Influent Contaminant Concentration vs. Time

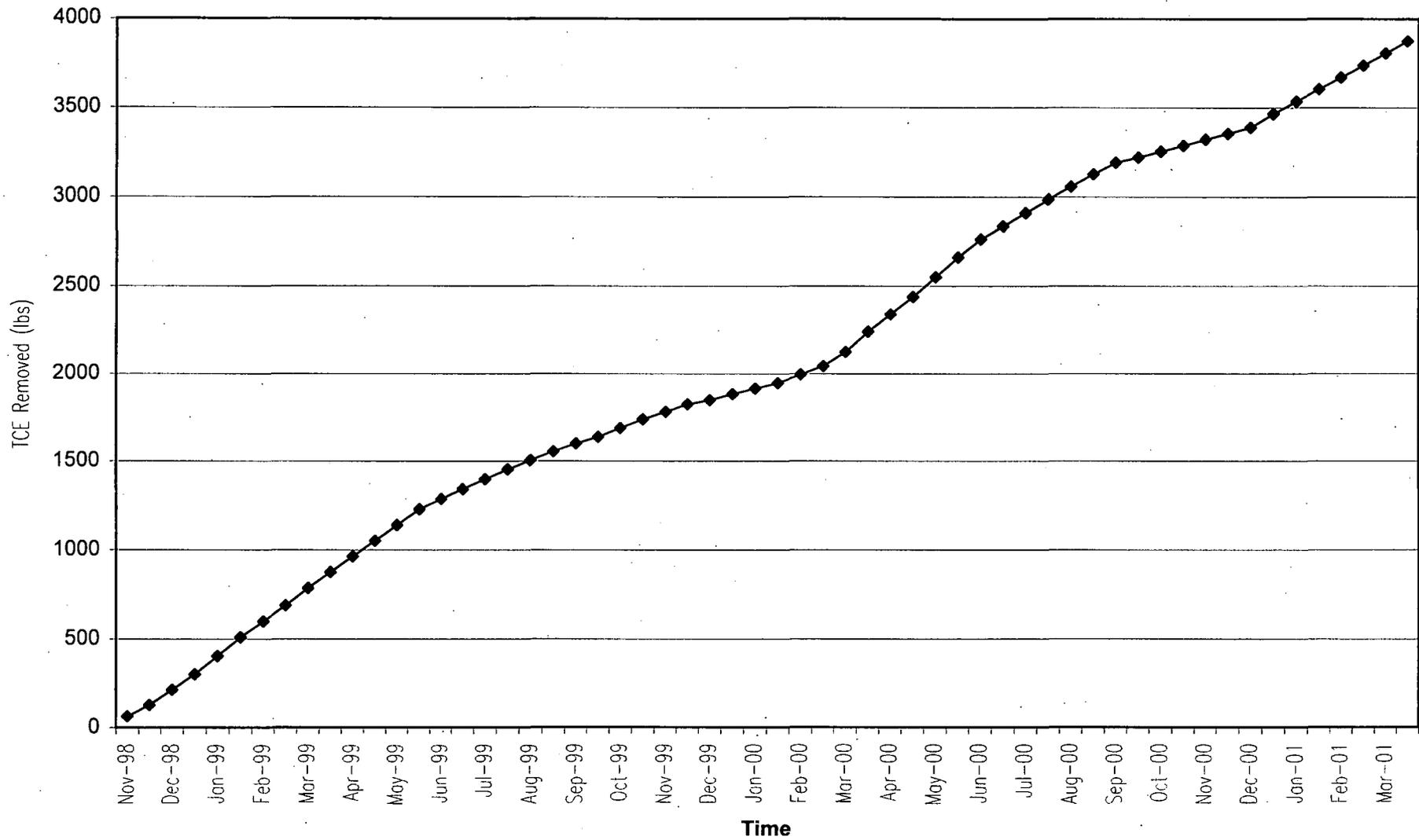


System Start Date: 11 November 1998

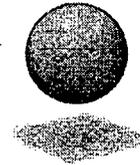
Figure 8

ATT 2
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TCE Removed



ATT 2
6/6



CH2MHILL

Planned Remedial Actions

Naval Industrial Reserve Ordnance
Plant (NIROP)
Fridley, Minnesota

Presented to
Restoration Advisory Board

April 26, 2001

ATTACHMENT 3
1 of 6

Modification to Groundwater Extraction System

- Three new wells (AT-7, AT-8, and AT-10) have been installed
- AT-9 (a replacement of well AT-2A) has been installed
- AT-2A has been abandoned
- AT-1A and AT-4 will be abandoned soon
- Packer will be installed in AT-3A
- Field work is scheduled for completion end of May



AT 3-2/6

Abandonment of Production Wells

- Production wells No. 2 and 3 have been abandoned



CH2MHILL

ATT 3 - 3/6

Anoka County Park Remediation

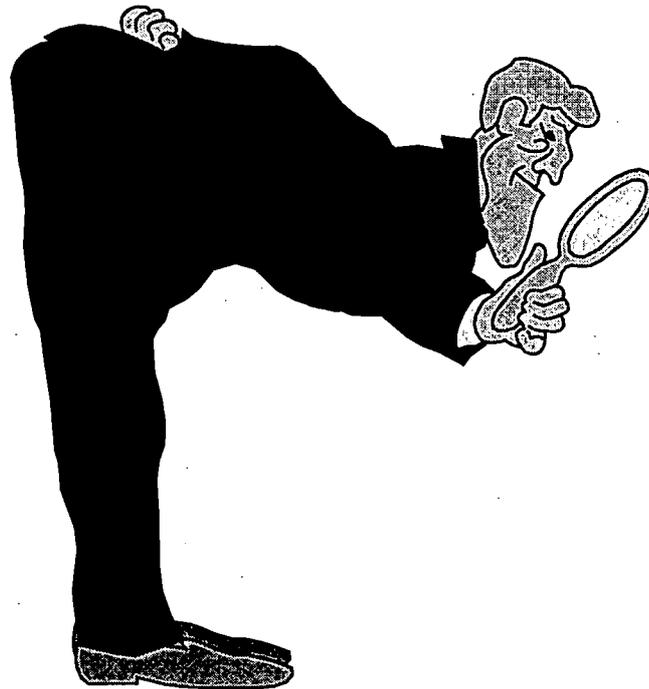
- Draft Work Plan for pilot-scale enhanced bioremediation using vegetable oil injection has been issued
- Incorporating comments on the work plan; final work plan due early May
- Petitioned for site access with ACP
- Working on injection variance with MDH
- Project is funded and the pilot-scale is scheduled to start after water level measurements are completed



CH2MHILL

ATT 3-4/6

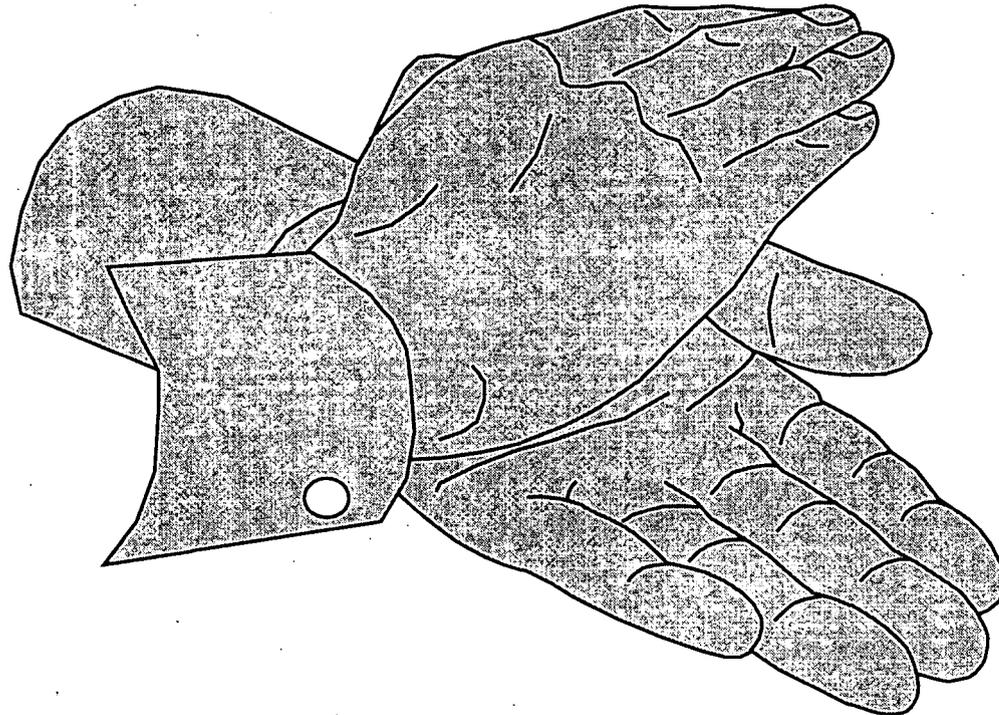
Questions?



CH2MHILL

A77-3 5/6

Thank You



APP 3: 4/6