Lawler, Matusky Environmental Science & Engineering Consultants Skelly Engineers

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ONE BLUE HILL PLAZA
P.O.BOX 1509
PEARL RIVER, NEW YORK 10865
(914) 735-8300
FACSIMILE (914) 735-7466

21 June 1991 File No. 535-005

Mr. Robert Marino
Chief, Site Control Section
Bureau of Hazardous Site Control
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Re: Flintkote (Orangeburg Pipe Company) Site No. 344013

Dear Mr. Marino:

On 6 June 1991, you were mailed <u>Summary Report: Soil and Groundwater Investigations Conducted on Block 754 of the Former Orangeburg Pipe Manufacturing Site, Orangeburg, NY.</u>

Enclosed is the Summary's backup report which presents the drill logs, field data sheets, laboratory reports, etc.

Sincerely yours,

Stuart E. Bassell, P.E.

Project Engineer

SEB/bm Enc.

cc:

Dan Eaton (NYSDEC - Hazardous Site Control)

John Swartwout (NYSDEC Eastern Investigation Section)

Ram Pergadia (NYSDEC Region 3) Barry Tornick (Dames & Moore) Dexter Lindberg (Flintkote)

Sean Mullany (Nixon, Hargrave, Devans & Doyle)

Eric Bergstol (Berbor Realty) Neil Borden (Berbor Realty)

BERBOR REALTY, INC. New City, New York

APPENDICES

SOIL AND GROUNDWATER INVESTIGATIONS CONDUCTED ON BLOCK 754 OF THE FORMER ORANGEBURG PIPE MANUFACTURING SITE

Orangeburg, New York

April 1991

LMSE-91/0321&535/005

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

LIST OF APPENDICES

A	Proposed Work Plan (November 1990)
В	Health and Safety Plan
С	Ground Penetrating Radar Survey
D	Soil Gas Study
E	Drilling and Well Construction
F	Test Pits
G	Well Development
Н	Groundwater Sampling
I	Surface Water Sampling
J	Laboratory Analyses

APPENDIX A

PROPOSED WORK PLAN

JOHN P. LAWLER, P. E.
FELIX E. MATUSKY, P. E.
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2 November 1990 File No. 535-005

Mr. John B. Swartwout, P.E. Chief, Eastern Investigation Section Division of Hazardous Waste Remediation NYSDEC 50 Wolf Road Albany, NY 12233-7010

Re: Site Investigation of Flintkote Property; Orangeburg, NY

Dear Mr. Swartwout:

Pursuant to our telephone conversation of 1 November 1990, Lawler, Matusky & Skelly Engineers (LMS) is submitting the work plan for site investigation of the 6 acre, triangular-shaped parcel owned by Flintkote. As mentioned, this project has only recently been authorized and has a very ambitious schedule. LMS has designed this study to answer questions raised in our previous work on the adjacent parcel, i.e. is source of contaminants located on triangular parcel or possibly on north side of Highview Avenue.

LMS will provide information to your office following our field investigations, laboratory analyses of groundwater and, of course, a copy of the final report will be forwarded to you.

As of this date, several of the tasks have been either completed or attempted. These include clearing of brush, ground penetrating radar search for utility pipes and soil gas/combustible gas survey. The site clearing task was conducted by our client, and not to our specifications, prior to a contract being signed. The soil gas survey was terminated after a day in the field because the soils were saturated from heavy rains to the point where results could be questionable. We have not yet made a decision regarding rescheduling this survey.

LMS is scheduled to begin investigative drilling/monitoring well installation during the week of 5 November 1990 and plans to complete this work by mid-December of this year.

Please be advised that Task 7 of the work scope has not yet been authorized by our client and will

obviously be predicated on our findings, discussions with NYSDEC etc.

We appreciate your understanding of this site and project and look forward to working with you on it. If you have any questions, please do not hesitate to call either Stu Bassell or myself.

Very truly yours,

Bruce L. Lippincott, Ph.D.

fruce & Lypincott

Senior Project Manager

cc: Ram Pergadia - NYSDEC Region 3

BLL:tms

Technical Scope: Remedial Investigation of 5.9 Acre Parcel

The scope and estimated cost of the project is based on the following assumptions:

- o Flintkote (or their representatives) will provide all existing engineering reports, environmental investigation reports, site drawings/maps, keys to existing monitor wells, etc. concerning the property;
- o The field work described above can be performed in Level D Personnel Protective Equipment;
- o Drilling can be performed with hollow stem augers or rotary methods;
- o The monitor well (MW) design and development criteria described in this proposal will preclude any unusual problems with turbid groundwater;
- O Drill cuttings and purge water generated during the MW installation and development procedures can be discharged on site (e.g. they need not be drummed);
- o LMS' Health & Safety Plan (HASP) developed and used for the previous investigations would remain applicable to the proposed field work;
- o The proposed two-day utility search/subsurface hazard screening will be sufficient for concerns related to worker health & safety.

Task (0) - LMS Mobilization/Contracting

During this task, LMS will develop the specifications for and subcontract geophysical, drilling and surveying services, as well as the laboratory analytical services for the testing of soil gas, sediment and groundwater samples. LMS anticipates that this task can begin within one week of written authorization from Bergstol Enterprises.

Task (1) - Site Clearing & Preparation

LMS plans to use Burns Contracting as our subcontractor for this task. This task will consist of the clearing of vegetation from approximately 3.5 acres of the eastern portion or the site, between Greenbush Road and the foundations of the former buildings. Emphasis will be on clearing surface debris and vegetation from areas around the proposed sample locations, which will be marked beforehand by LMS personnel in the field. Cuttings and debris will be stockpiled neatly on site.

Task (2) - Utility Search

As previously mentioned, this site was formerly one of the principal manufacturing areas for the Orangeburg Pipe Company. Insurance maps reviewed by LMS during our previous work on the adjacent properties indicated the former presence of underground storage tanks (USTs) and/or aboveground storage tanks, a plastics manufacturing building and several other manufacturing buildings on this property. LMS' personnel have performed several visual inspections of the site which have confirmed the presence of complicated underground structures. Therefore, LMS will subcontract Subsurface Consulting Ltd. to perform ground penetrating radar (GPR) screening of most of the proposed boring locations (Figure 1).

Ten ft by ten ft "boxes" centered on the proposed boring locations will be surveyed to pre-screen the subsurface conditions, such that the risk to worker health and safety as well as damage to subsurface structures can be reduced. The GPR survey will pay special attention to the former UST area.

Task (3) - Soil Gas/Combustible Gas Surveys

LMS will subcontract the services of Tetra-K Testing to perform the VOC analyses of the soil gas samples utilizing a portable, laboratory grade gas chromatograph. LMS and/or Tetra-K Testing personnel will install 20 to 30 soil gas probes over the course of a two-to-three day soil gas survey. The first day of the survey will be used to obtain information on the presence or absence of volatile organic compounds (VOCs) in the soil vapor over a wide area, while the following day(s) will utilize the results of the first to focus on particular areas of concern. The tentative locations of these soil gas samples are shown on Figure 1.

Each probe will be set at a depth of 3 to 5 ft below ground surface (BGS) at the approximate locations shown in Figure 1. The analyses of soil gas samples will focus on (1) DCA and its related compounds, (2) the volatile (BTX) fraction of fuel oils and gasoline, and (3) the CO₂, methane and oxygen content of the soil gas. Analyses (1) and (2) will screen for "direct" evidence of organic solvents and hydrocarbons and will be performed by Tetra-K Testing personnel. The latter analyses (3) will be performed by either Tetra-K or LMS personnel with portable sensors, and will screen for "indirect" evidence of these potential contaminants.

Task (4) - Investigative Drilling/MW Installation

Based on the results of Tasks (2) and (3), LMS will make the final selection of the locations of 20 to 25 investigative soil borings. Four of these borings will be completed as shallow groundwater monitor wells, and will be screened across the inferred depth of the water table. Because of the potential presence of a free-product fuel oil plume on site, up to five additional borings will be completed as piezometers to provide more detailed hydrogeologic information, as needed. LMS proposes to use Kendrick as our drilling subcontractor; oversight of the drilling program will be provided by a qualified LMS scientist.

Because of the fine-grained nature of the overburden sediments at this site, LMS will design these MWs with carefully selected screen and pack materials. The MWs will be constructed of 2" inside diameter (ID), 0.006 in. slot PVC VEE-Wire screen, (manufactured by Johnson Filtration), or similar material. The MWs will be surrounded by a minimum of a 2 in. fine sand pack, consisting of Morie 00 sand or similar material. The MWs will be protected with cast-iron standpipes and locking caps. If installed, the proposed piezometers will be constructed of 1.25 in. ID, 0.010 in. slotted PVC screen and riser, and will be surrounded by a sand pack consisting of Morie 0 sand or similar material. All investigative borings not finished as MWs or piezometers will be properly grouted with a cement-bentonite slurry. The tentative locations of these borings/MWs are shown on Figure 1.

LMS proposes two separate mobilizations for this project. The first mobilization will include the advancement of approximately 15 borings, four of which would be completed as MWs. Approximately 7 sediment samples would be submitted for EPA Method 624 VOC, 625 Semivolatile and petroleum hydrocarbon (PHC) analyses.

After the first drilling phase is complete, the new MWs and will be surveyed, carefully developed and allowed to stabilize for a minimum of one week. The piezometers which are installed will be also be surveyed, but are not proposed to be developed or sampled. Subsequently, these MWs will be purged of ≥3 well volumes and sampled. Groundwater samples will be shipped for EPA Method 624 VOC, 625 Semivolatile and PHC analyses—the details of the development and sampling program are provided in the description of Task (5) below.

Upon receipt and review of the analytical results of the first round of soil and groundwater samples, LMS will select the remaining boring locations and initiate the second phase of drilling. Approximately 5 to 10 additional borings will be advanced, with a few of these borings completed as a 1.25 in. ID piezometers. Approximately 3 additional sediment samples will be sent for Method 624 VOC, 625 Semivolatile and PHC analyses.

Task (5) - Well Development, Field Sampling and Analyses

The coordination and timing of this task with Task (3) is described above. Task (5) is proposed to include the sampling and chemical analyses of a total of approximately 12 soil/sediment samples, (10 from borings and 2 from surface water streams/ditches), 14 groundwater samples. Two rounds of sampling and analyses will be conducted on seven MWs, (e.g. an initial round and a duplicate). The seven monitor wells that are proposed to be sampled are denoted with an asterisk on Figure 1. Surface water and surface water-sediment sample locations are also shown on Figure 1. LMS proposes to use CAMO Laboratories and Envirotest as our subcontractors for these chemical analyses.

The sediment samples will be obtained by scraping a representative subsample from the contents of the driller's split spoon with a clean stainless steel or teflon sampling spoon by the LMS field scientist. The specific depth interval and split spoon to be subsampled from a given boring will be selected in the field, and will be based on both visual observations and screening of the split spoons with an organic vapor analyzer (OVA) or photoionization detector (PID).

Surface water samples will be obtained by dipping the sample jar directly into the stream/ditch. Surface water-sediment samples will be obtained with a clean stainless steel spoon.

The MWs will be developed by removing a minimum of 5 well volumes with a centrifugal pump. A dedicated length of polyethylene hose will be used in the development of each well. LMS personnel will utilize a turbidity meter to periodically check the turbidity of the purged ground water--NYSDEC's guidance criteria of ≤ 50 nephelometric units (NTUs) will be used to determine when development is complete. Purge water will be discharged on the ground surface on site, downgradient of each respective well.

As noted above, groundwater samples will be obtained from a total of seven monitor wells, e.g. from both the four new MWs and three existing MWs (MW-1D, MW-18 and MW-20). Each MW will first be purged of ≥ 3 well volumes, (or until a purge water turbidity of ≤ 50 NTUs is achieved), and then sampled; subsequently, these groundwater samples will be shipped for Method 624 VOC, 625 Semivolatile and PHC analyses. The new and existing MWs will be sampled with dedicated teflon or stainless steel bailers.

Water level measurements will be obtained from all of the accessible MWs both on this property and the adjacent parcels at least once over the course of the project. Water level measurements will be obtained more frequently, (as appropriate), from both the new and existing monitor wells on the site to be investigated (Figure 1).

APPENDIX B
HEALTH AND SAFETY PLAN

LAWLER, MATUSKY & SKELLY ENGINEERS

SITE-SPECIFIC

HEALTH AND SAFETY PLAN FORM

Route 303,
Site Name: Orangeburg Shopping Ctr Location: Orangeburg, NY
HASP Preparer: Stephen Seymour Job No. 535-004 00 5
APPROVALS Project Manager: Carla Logan Bruce Sphinsott
Safety Officer: Karen Wright Killer Colling Rif
PROJECT PERSONNEL:
On-Site Coordinator: <u>Kevin McGuiness</u>
On-Site Health and Safety Officer: Stephen Seymour Tarik Zarrouk
Phone: (914) 735-8300
DATE OF PLAN PREPARATION: January 4, 1989 revised 10/31/90
HAZARDOUS/SUBSTANCES (known or suspected, contaminated media or in storage container, etc.):
Asbestos
Petroleum hydrocarbons
PCBs
Coal tar
1,1,1-trichlowethane; 1,1-dichlowethane; 1,2-dca
chloroethane
Morobengene
tetrochloroethyline
toluene, pylenes, ethylbengene
•

HAZARD ASSESSMENT (toxic effects, including TLVs, IDLHs, reactivity, stability, flammability, and operational hazards with sampling, decontaminating, etc):

	TLV, mg/m ³	STEL, mg/m ³	IDLH,	LEL,	UEL,	FP, °F	VP,	VD	Odor threshold ppm	Time to breakthrough ppm
Asbestos	0.2-2 fibers/		Ca	_	_	_	_	_	None	_
PCB 1242	1	2	Ca		_	349	0.001	_	_	
PCB 1254	0.5	1	Ca	_	_	432	0.0000	6 -		
Coal tar	0.2	-	Ca	-	-	-	-	-	-	-
ore attacks	ITE WORK tion	ZONES: zone a attach	des) nd supp	ignate oort zo	exclu	sion	zone, o	contam	ination redu	IC
<u>S1</u>	ITE ACCE								access) case of emer	gency
<u>MC</u>	tami Bac mon	toring nation kground itoring	the si in all readi	te for media ng of	ident : suppor	ity a	and con	Centra	fficer) ation of con Continuous all on site	
	_act	ivities	•							

TABLE 1 Orangeburg Shopping Center

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% â deg. F)	UEL (%)	AUTOIG. FLASHPOINT TEMP. (F) (F)	AUTOIG.	۲. (mg)	8	IP SOL	LUBILITY (%)	ODOR IP SOLUBILITY THRESH. RESP. (eV) (%) (ppm) PROI.	RESP. PROT.	TOXIC EFFECTS
Chlorobenzene	Monochlorobenzene, Chlorobenzol, Phenyl chloride, MCB	٤	ī	82	2400	1.3	1.7	78	1099	8.8	3.9	9.07	0.1	0.21-60	yes Irrit inco;	0.21-60 yes Irrit skin, eyes, nose; drow; inco; liver damage
Chloroethane	Hydrochloric ether; muriatic ether	1000		1000	20000	8.	15.4	-58	996	1064	2.2	10.97	9.0		no Inco, card	Inco, inebriate; abd cramps; card arrhy, card arrest, liver, kidney damage
1,1-Dichloroethane	Ethylidene chloride; 1,1-Ethylidene dichloride; Asymmetrical dichloroethane	200		100	4000	٧٥	91	17	824	182	3.42		-0.1	120	no CNS o uncor dam	no CNS depres; skin irrit; drow, unconscious; liver, kidney dam
1,2-Dichloroethane	Ethylene dichloride; Glycol dichloride; Brocide	0	-	20	carcino	carcinogen 6.2	91	55	775	62	3.4	9.64	0.8	6.2-100 no	no CNS d irrit carc.	CNS depres; nau, vomit; derm; irrit eyes; conneal opacity; carc.
Ethylbenzene	Phenylethane; Ethylhexol	100		100	2000	-	6.7	65	810	7.1	3.7	8.76	0.015	0.25-200	Oyes Irri	0.25-200yes Irrit eyes, muc memb; head; derm, narco, coma

(-): Unknownc: Ceiling limit.NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

TABLE 1 Oran

Senter	
Shopping (
angeburg	

СОМРОИИВ	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% a deg. F)	UEL (%)	AUTOIG. FLASHPOINT TEMP. (F) (F)	AUTOIG.	4 E	8	IP SOLU	ODOR IP SOLUBILITY THRESH. RESP. (eV) (%) (Rpm) PROT.	ODOR THRESH. RE (ppm) PR	RESP. TOXIC EFFECTS	FECTS
Tetrach loroethylene	Perchl oroethyl ene	05	۵	100	carcino	carcinogen nc	٤	٤ *		7		9.32 0	0.015	n 02-7-4	4.7-50 no Irrit eyes, nose, throat; nau; flush face, neck; vertigo, dizz, inco; head; som	ose, throat ce, neck; inco; hea
Toluene	Toluol; Phenylmethane; Methyl benzene	100	100	200	2000	1.3	7.7	70	896	55	3.1	8.82 0	0.05	3.17-40 y	0.17-40 yes Ftg, weak, conf, euph, dizz, head; dil pup; ner; musc ftg; insom; pares; derm; photo	nf, euph, d ; ner; musc derm; phot
1,1,1-Trichloroethane	Methyl chloroform	350		350	1000	٨	91	2		100	4.55	0	0.07	20-500 no	O Head, Lass; CNS depress, poor equi; irrit eyes; derm; card arrhy	4S depress,
o-Xylene	1,2-Dimethyl benzene	100	100	100	1000	-	•	06	867	_	3.7	.56 0.	8.56 0.00003 1.8		yes Dizz, excitement; drow; inco; stagg gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau,	ent; drow; rrit eyes, il anor, nau

(-): Unknownc: Ceiling limit.NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

11/01/90

TABLE 1 Orangeburg Shopping Center

					HAZARDOUS	HAZARDOUS SUBSTANCES									
On Somo	SPARUNAS	ACGIH TLV	NIOSH REL	OSHA PEL	NIOSH	LEL	1	AUTOIG.	AUTOIG.	d (ę	IP SOLUBII	00 LITY THR	VD IP SOLUBILITY THRESH. RESP.	
COMPOUND	STNONTRI	(wdd)	(wdd)	(wdd)	(wdd)	(% al deg. F)	8	3	(HE)	E		(A)	5	(eV) (A) (ppm) PKUI.	loxic effects
n-x√lene	1,3-Dimethyl benzene	100	100	100	1000	5	~	ž	982	٥	3.7	3.56 0.0	20003	.1-3.7 yes	3.7 8.56 0.00003 1.1-3.7 yes Dizz, excitement; drow; inco; stagg gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau, vomit, abd pain; derm
p-Xylene	1,4-Dimethyl benzene	100	100	100	1000	5	^	18	984	٥	3.7	8.44 0.0	50003	0.47-0.5yes	8.44 0.00003 0.47-0.5yes Dizz, excitement; drow; inco; stagg gait; irrit eyes, nose, throat; corneal vacuolization; anor, nau, vomit, abd pain; derm

(-): Unknownc: Ceiling limit.NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

N/A	
Personnel monitoring proce	dures:
N/A	
TAMINATION AND DISPOSAL	
Decontamination Procedures	<pre>(contaminated personnel, surfaces, materials, instruments, equipment etc.):</pre>
Wash overboots before rem	oving. All equipment to be deconne
in lab before going to fi	eld. Field decon - see SOP for
procedure.	
	· · · · · · · · · · · · · · · · · · ·

Disposal Procedures (contaminated equipment, supplies, disposables, washwater.
Drill cuttings to be left at borehole. Decon water to be
poured on ground. All disposable clothing to be bagged and
returned to lab.
EMERGENCY PROCEDURES
In event of personnel exposure (skin contact, inhalation, ingestion, specific proce- dures for specific chemicals):
Immediately wash exposed area with water. Get to fresh air.
In event of personnel injury:
Monitor ABCs. Perform first aid if needed. Obtain
_professional help if needed.
In event of potential or actual fire or explosion:
Evacuate personnel from field to meeting site (vacant
restaurant). HSO to account for all personnel. Contact
emergency services as required.

N/A	ionizing radiation exposure
In event of environmental accide outside sites):	ent (spread of contamination
Evacuate personnel. Stop sprea	d of chemical if possible.
Notify LMS and client.	
GENCY SERVICES (complete here or ite)	have separate list availabl
Location	Telephone
Emergency Medical Facility	<u> </u>
Nyack Hospital	
N. Midland Avenue	
Nyack, NY	
Ambulana Carata	
Ambulance Service	
S. Orangetown	359-3030
Fire Department	
Orangetown	358-9751
Orangeburg Volunteer	

<u>Location</u>	<u>Telephone</u>
Police Department	
Orangetown	359-2121, 359-3700
Orangetown Auxiliary	359-8388
Poison Control Center	
Nyack	353-1000
PERSONNEL POTENTIALLY EXPOSED TO HAZARD	OUS SUBSTANCES (As Applica- ble)
Personnel Authorized to Enter Site site would preclude most LMS train site and would allow only certain	ed persons from entering
1. N/A	
2	
3.	
4.	
5	
ALTERNATIVE WORK PRACTICES	
(Describe alternative work practic ified in this form. Indicate work chapter for which proposed alterna serve as substitute.)	practices specified in the
N/A	

TASK-SPECIFIC LEVEL OF PROTECTION (attach table including specific description of protective gear)
See attached Table 1
SITE MAP
(Attach a site map. Map should be properly scaled and keyed to local landmarks.)
See Figure 1
TRAINING
(Provide description of minimum training, reference OSHA Sections).
2 persons 29 CFR 1910.120e(2)

<u>AFFIDAVIT</u>

All personnel who enter site must sign attached affidavit. LMS personnel must also read and comply with LMS' generic HASP.

<u>AFFIDAVIT</u>

I,, (name) of
(company name) have read the Health and Safety Plan (HASP) for the
(site description and project description).
I have also read the LMS generic HASP. I agree to conduct all on-
site work in conformity with the requirements of both HASPs. Ir
addition, I acknowledge that failure to comply with the designated
procedures in the Health and Safety Plans may lead to my removal
from the site.
Signed
Date

TABLE 1 TASK SPECIFIC LEVEL OF PROTECTION

TASK	LEVEL	DESCRIPTION			
Drilling and Installation of Monitoring Well	D-C	Hard hat, safety shoes, safety glasses, overboots, coated Tyvek, latex gloves, nitrile gloves in case of contact with soil. Respirator on hand.			
Groundwater Sampling	D-C	Same as above except coated Tyvek and nitriles optional in case of splash.			

Action Levels: If HNU reads greater than 0.5 ppm above background in breathing zone upgrade to Level C respiratory. If HNU reads above 5 ppm in breathing zone above background, stop work.

> If encounter asbestos or asbestos-like material, put on the respirator, coated Tyvek with hood, overboots and nitriles taped to coated Tyvek.

DATE:

7 January 1991

FILE No. 535-005

TO:

Jim Morrison

FROM:

Eric Hince

SUBJECT:

Revision of LMS' Health & Safety Plan for Bergstol/Flintkote RI Subsurface

Tunnel Inspection

Jim, enclosed is the most up-to-date HASP for the above-referenced job that was prepared by Stu and Karen Wright. This HASP was originally sent to Don Kassell for the drilling and sampling programs. Please check over the HASP to make sure it meets your standards, and include your standard confined space entry and Level B (both airline and SCBA) procedures. We should have some additional information this week, as we plan to drill a couple of holes through the concrete pad overlying the tunnels to determine the thickness of the concrete and to get some HNu and/or Draeger tube readings (talk to Joe Condello about this if you like).

For your information, I discussed the tunnel inspection with John Guzewich last week. The tentative plan is to open the tunnel at two separate locations, (e.g. rip or cut open a min. 3 ft x 3 ft opening), ventilate the hole, set up the Miller Retrieval tripod and have one Level B equipped person enter and visually inspect the tunnel within ≈25 ft of the opening (more or less, depending on the observed conditions). This task is tentatively scheduled for Thursday 17 January or Friday 18 January. John and I discussed three objectives: (1) Use the HNu, Draeger Tubes and CGI to obtain air quality data from the confined and unventilated portion of the tunnel, (2) obtain some photographs to document the physical condition of the tunnel, and (3) obtain samples of free product (fuel oil and/or solvent) from the base of the tunnel. John informed me that this task would most likely be performed by himself, Joe Condello or Don Henshaw, (I can't do it since I would need an in-house 24-hour Level B course, the scheduling of which would be unlikely before 17 January). In addition, our plan was to have two people on Level B standby outside the tunnel. Since we plan to attempt to vibracore at the site the same day, myself, Kevin McGuinness and Jim McKenna should also be present on site.

Thanks for your help. Please let me know if you will need more than 8 hours of your time, (plus an equivalent amount of clerical or word processing time), to revise the HASP. If you have any other questions or concerns, please call me at X263.

APPENDIX C

GROUND PENETRATING RADAR SURVEY

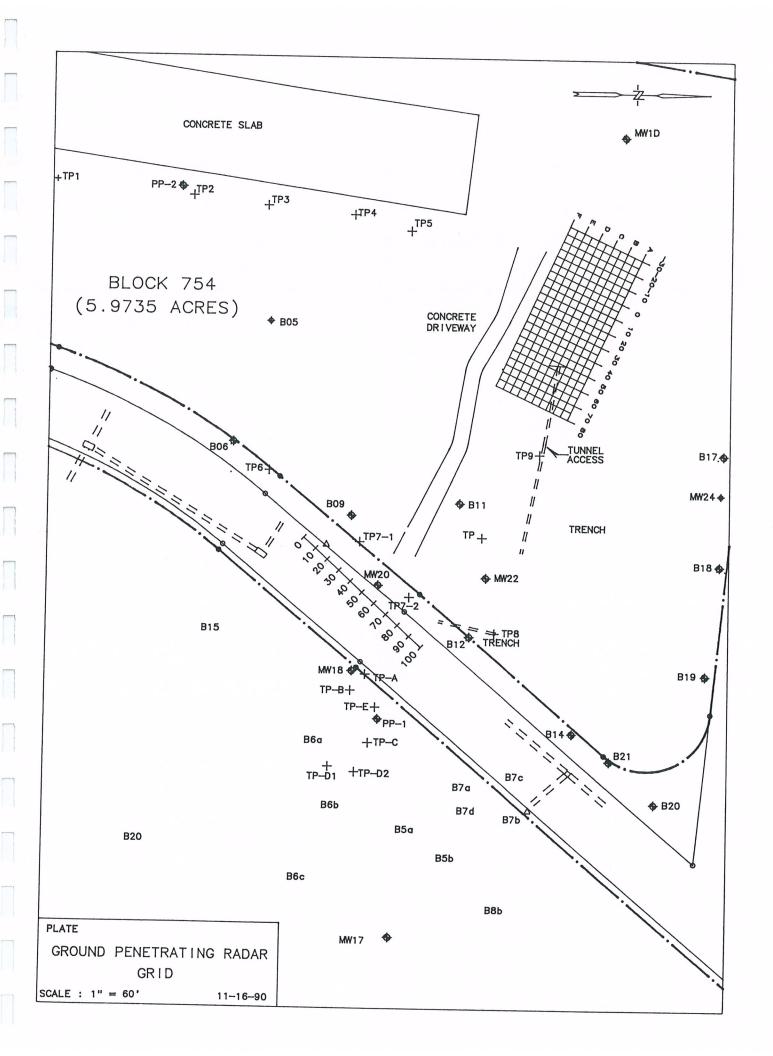
APPENDIX C

GROUND PENETRATING RADAR SURVEY

On 18 October 1990 GPR was employed to help determine whether subsurface structures were present at the proposed drilling locations in Block 754. The survey was conducted by Subsurface Consulting Ltd. of New Fairfield, Connecticut. Approximately 3000 linear feet of radar scans were run at 10-ft intervals, encompassing about 5000 ft² of area. The survey utilized 300- and 500-Mhz antennas. Although the site had been cleared of brush and small trees beforehand, the disturbance of the terrain and extent of concrete foundation limited the survey. Nothing was uncovered in the vicinity of the planned drilling that warranted any changes in the contemplated work.

On 16 November 1990 a second GPR survey was run in an area of the site where underground tanks were indicated, according to old insurance maps and interviews with a local resident. Additionally, the location of a possible tunnel near Greenbush Road was screened. Over 4800 linear feet of radar scans (300 and 500 Mhz) that encompassed an area of approximately 5500 ft² were studied. These scans were run over a pre-surveyed grid (see attached figure). The presence of the underground tanks and the tunnel were indicated by the GPR and were subsequently investigated further with a backhoe (see Section 2.6.1 of the Summary Report).

The radar images are archived with LMS project file.



APPENDIX D

SOIL GAS STUDY

APPENDIX D

SOIL GAS STUDY

D.1 CONSTRUCTION PROCEDURES

The soil gas points consisted of an aluminum slotted shield point connected to the surface with Teflon tubing. Concrete surfaces were first penetrated with a rotary hammer. The overburden was penetrated by driving a hardened stainless steel drive point with a slam bar and sliding hammer. The drive point was connected to the slam bar by stainless steel rods. As the point was advanced into the overburden, stainless steel rods were added in 3 ft increments. Having created an open hole to 4 ft, (or 10 ft) the drive system was withdrawn. The shield point was connected to the Teflon tubing, which was run up through the hollow center of the stainless steel drive rods, and the unit was reinserted to a maximum 4 ft. The stainless steel rods were withdrawn a second time, leaving the slotted shield point and Teflon tubing in place. The annular space around the shield point was backfilled with sand, and a hydrated bentonite seal was emplaced above to prevent atmospheric gases from flowing through the annular space. The end of the Teflon tubing was plugged with clay.

D.2 SAMPLING

The probes were evacuated with a vacuum pump to guarantee representative sampling. Based on the estimated diameter and estimated depth of the opening, three volumes of air were purged to ensure that representative interstitial gases were sampled. Percent LEL was measured with a combustible gas indicator. Oxygen concentrations were measured with the same equipment. Carbon dioxide concentrations in the soil gas were measured with direct reading colorimetric indicator tubes manufactured by National Draeger. A soil gas sample was collected with a 5 ml gas-tight syringe at the point where the pump was attached to the tubing. One probe yielded water that was sampled.

D.3 ANALYSES

This procedure is designed to provide semi-quantitative information on the concentration of volatile organic compounds (VOCs) in the water and soil gas samples.

D.3.1 Method Description

This method is a gas chromatography method that employs a field gas chromatograph (GC) with electron capture (ECD), photoionization (PID), and flame ionization (FID) detection of VOCs. The FID and PID detectors are linked in series, and because the PID is a non-destructive detector, it is placed first and the FID is placed second on the detector block. The ECD detector installed on the GC is set up with a separate injector and is used primarily to verify the presence or absence of chlorinated compounds. Following laboratory set-up and calibration, samples are collected in the field, transported to the on-site mobile laboratory, prepared for analysis and entered into the GC system. Soil gas samples are collected in the field and injected directly into the GC. Water samples are prepared by headspace and heating to 90°C, and a sample of the headspace gas is then injected into the GC. Output from the GC is plotted on integrators that identify calibration peaks via retention times, measure area of the peaks and calculate contaminant concentrations. Computers and printers are employed to generate field data reports.

D.3.2 Laboratory Equipment

The following equipment is used to carry out this method:

- HNU Model 421 temperature-programmable GC (HNU Systems, Newtown Highlands, MA) with photoionization detector, flameionization detector and electron capture detector along with carrier gases and other equipment necessary to run the GC.
- two Hewlett Packard Model 3396A analog signal integrators.
- VWR temperature controlled water bath.
- Ohaus Cent-O-Gram analytical balance.

- 10 μl, 50 μl syringes and 5000 μl gastight syringes.
- analytical standards for the VOCs being analyzed.
- ultra-pure methanol.
- 40 ml VOC vials.
- volumetric flasks, beakers, pipets and other general laboratory supplies to accurately transfer, measure and dispense organic liquids.

All equipment is transported, stored, and operated in a clean, contamination-free mobile laboratory environment.

D.3.3 Instrument Set-Up

The analytical column used is a 1/8-in. x 6-in. stainless steel packed column with 1% sp-1000 on 60/80 Corbopack B (Supelco, Inc., Bellefonte, PA). The temperature program is:

```
Initial temperature - 80°C
Holding time - 3.0 min
Ramp rate - 15°C/min
2nd temperature - 220°C
2nd holding time - 25.0 min
```

After injector, detector, and oven temperature equilibration, the system is ready for sample injection.

One integrator each is connected to the FID, PID and ECD detectors and set up with the following parameters.

```
Attenuation = 7
Threshold = 6
Chart speed = 1.0 cm/min (default value)
Peak width = 0.04 (default value)
Area rej. = 0 (default value)
Timed events - time = 0 int. func. 8
time = 33.0 STOP
```

OPT 2 - Run data storage
Store signal data
Device = M
Bunched data storage
No processed peak storage

Date and time is set through the DATE and TIME commands

After detectors have been turned on and the flame ignited on the FID, the detectors are zeroed via the AUTO ZERO on the GC. The GC-integrator system is now ready to accept the signal data.

The water bath is filled with water and heated to 90°C.

D.3.4 Calibration

Calibration of the GC system is carried out through injection of known concentrations of the compounds of interest. In cases where no sample data is present, the GC system is calibrated for as many of the Target Compound List (TCL) volatiles as possible. For water analyses, the GC is calibrated using headspace preparation, and for soil gas analyses, liquid standards are injected directly into the GC.

A standard list of volatile organic compounds is used in this method. This list includes many of the most common solvents, cleaning fluids and other industrial volatile organic chemicals. Mixed standards are prepared from pure compounds and diluted to the appropriate concentrations. Listed in Table 1 are the compounds and the standard concentrations to be used for calibration. The stock standard is made on a monthly basis and kept at the base laboratory at freezing temperatures. The secondary standard is made on a weekly basis and kept refrigerated when not in use. The working standards are made just prior to injection and used only once.

A clean 40 ml glass vial is filled with distilled water, then injected with 10 μ l of the secondary standard, followed by an injection of 4 μ l of the internal standard (internal standard mixture is a 200 mg/L solution of fluorobenzene) and shaken. Ten milliters of headspace is created

TABLE 1. VOC STANDARD FORM

	STANDA	RD CAL	CULATIO	N FORM			
	5/5/00						
DATE:	5/5/89						
STANDARD TYPE:	SOIL GA				Dilui		Working Std
		Dilution		- Ci -	Dilution		Working Std. Conc.
	Density			Stock		\ /l= /==1\	
FORM I VOA from CLP	g/ml	Va (ml)	Vb (ml)	mg/L	Va (ml)		0.0
Chloromethane	0.9159		25	0	0.005	500	0.0
Bromomethane	1.6755		25	0	0.005	500	0.0
Vinyl Chloride	0.9106		25	0	0.005	500	0.0
Chloroethane	0.8978		25	0	0.005	500	0.0
MethyleneChloride	1.3266	0.700	25	37,145	0.005	500	371.4
Acetone	0.7899	0.200	25	6,319	0.005	500	63.2
Carbon Disulfide	1.2632	0.100	25	5,053	0.005	500	50.5
1,1-Dichloroethene	1.2180	0.100	25	4,872	0.005	500	48.7
1,1-Dichloroethane	1.1757	0.100	25	4,703	0.005	500	47.0
1,2-Dichloroethene (total)	1.2565	0.100	25	5,026	0.005	500	50.3
Chloroform	1.4832	0.100	25	5,933	0.005	500	59.3
1,2-Dichloroethane	1.2351	0.300	25	14,821	0.005	500	148.2
2-Butanone	0.8050	0.150	25	4,830	0.005	500	48.3
1,1,1-Trichloroethane	1.3390	0.100	25	5,356	0.005	500	53.6
Carbon Tetrachloride	1.5940	0.100	25	6,376	0.005	500	63.8
Bromodichloromethane	1.9800	0,100	25	0	0.005	500	0.0
1,2-Dichloropropane	1.1560	0.100	25	4,624	0.005	500	46.2
Trichloroethene	1.4642	0.100	25	5,857	0.005	500	58.6
Dibromochloromethane	1.5482	0.100	25	0	0.005	500	0.0
	1.4397	0.100	25	0	0.005	500	0.0
1,1,2,-Trichloroethane	0.8765	0.150	25	5,259	0.005	500	52.6
Benzene	2.8899	0.100	25	0	0.005		0.0
Bromoform	0.8000	0.150	25	4,800	0.005		48.0
4-Methyl-2-Pentanone	0.8120	0.150	25	4,872	0.005		48.7
2-Hexanone	1.6227			6,491	0.005		64.9
Tetrachloroethene		0.100		0	0.005		0.0
1,1,2,2-Tetrachloroethane	0.8669			5,201	0.005		52.0
Toluene	1.1058			4,423	0.005		
Chlorobenzene	0.8670			5,202	0.005		
Ethylbenzene	0.9060			0,202	0.005		
Styrene	0.8680			5,208	0.005		52.1
m-xylene	0.8802			5,281	0.005		
o&p-xylene	0.0002	0.130	- 20				

by removing 10 ml of solution via a pipet. The vial is recapped and vigorously shaken for 1 min and placed in the water bath at 90°C for approximately 10 min. After temperature equilibration at 90°C, the vial is removed from the water bath, 1 ml of the headspace is withdrawn using a 5 ml gastight syringe and injected into the GC. The integrators are started simultaneously with the GC. Signals from the FID and PID are plotted on the two integrators and following the elution of the final peak, the data from the peaks are tabulated through the post-run data report. Through the PREP CAL dialogue on the integrator, response factors (amount/area ratio) are calculated for each compound of interest. The internal standard method of calibration is used, whereby the response factors for individual compounds are adjusted after each sample run depending on the size of the internal standard peak.

Standardization for soil gas is carried out in the same manner except liquid standards are injected into the GC rather than the headspace standards as described above. The system is calibrated for picograms to nanograms for each of the compounds of interest.

D.3.5 Sample Preparation

Soil Gas. Soil gas samples need no preparation after collection in the field. A 1-5 ml sample is injected directly into GC. Adjustments in the volume of sample injected are needed depending on the concentration of the compounds in the soil gas. Dilutions with ambient air are made in the syringe.

Water. Water samples need no special preparation unless a dilution is determined to be necessary (either through prior data, odor or other field measurements). Dilutions are made by pipetting the appropriate amount of sample out of the 40 ml vial into another 40 ml vial and bringing up to volume with distilled water. The sample to be analyzed is injected with 4 µl of the internal standard mixture and agitated to mix. Ten milliters of headspace is created by uncapping, removing 10 ml of sample via a pipet and recapping. The sample is then shaken vigorously and set in the 90°C water bath for ten minutes. After equilibration at 90°C, the sample is removed and 1 ml of headspace withdrawn with a gastight syringe and injected into the GC.

Note: Provided the sample is opened, sample removed and recapped without a lot of agitation, there is no appreciable volatilization of the compounds from the surface of the open sample in that short period of time. However, care is exercised when handling the open sample in the lab.

D.3.6 Data interpretation

Sample peak retention times (RTs) are compared to the retention times of the standard peaks to identify contaminant compounds. Contaminant peaks with RTs identical (±0.1 min) to the standard peaks are considered as positive hits and are reported by the integrator in the post-run report. However a second verification is made by the analyst to ensure the truth of the identification. The analyst verifies the "hits" using the following criteria:

- Retention times must match to within 0.1 minute of standard retention times.
 Extremely large peaks may have slightly different RTs because of the long duration of the elution of the peak.
- Verification of the peak may be made by comparing the peak response on the other detector using these criteria:
 - Peaks with significant areas should be detected on the FID detector when they are present on the PID.
 - Peaks detected on the FID detector may not be present on the PID chromatogram if the ionization potential (IP) is greater than 10.2 eV. Generally, saturated aliphatic and saturated halogenated compounds have IPs >10.2, i.e., butane and 1,1,1-TCA. As an example, gasoline will contain many saturated hydrocarbons that will not be detected on the PID detector. These hydrocarbons, penetenes, isopentanes, hexanes, etc., have IPs >10.2 eV and will have responses on the FID only.
 - The PID detector has a 10-100X greater sensitivity for unsaturated compounds; aromatic and chlorinated ethenes. Samples peaks matching these compounds should show a greater sensitivity on the PID detector. If the FID detector shows a greater sensitivity for peaks matching the retention times of aromatic and unsaturated compounds, then the identification is considered a false identification and the analyst notes this with an "X" next to the CAL#. Using gasoline contamination as an example: some compounds in gasoline will have RTs that match the RTs for 1,2-dichloroethene and trichloroethenene, however when the response (peak areas) are compared on the PID versus the FID, it is noted that FID peaks are much larger (usually noticeable in the concentration calculation by the integrator). Because the FID response is much greater (Usually 10-

100X) for saturated compounds than the PID response, these "hits" are considered false identification and the peak is labelled an unknown hydrocarbon.

Through the use of the these criteria, a secondary qualification is made to verify or deny the identity of a compound peak in the sample.

D.3.7 Reporting

Peaks determined to by positive hits are marked with a check mark and any dilution or concentration factor is used to correct the listed concentration. The final concentrations are entered into the reporting form on the computer and field data reports are printed. The final concentrations are calculated using the following procedures.

Water. If no dilution is made of the water sample, then the $\mu g/L$ concentrations on the integrator report can be read directly as sample concentration. If a dilution is made then these values are simply multiplied by the dilution factor.

Example: 100 μg/L of toluene is measured in a sample. The sample was prepared by diluting 200 μl of sample into a 40 ml vial.

```
100 \mug/L * 0.04 L/200 \mul = 0.02 \mug toluene/\mul = 0.02 mg/ml 0.02 mg/ml = 20 \mug/ml = 20 mg/L or 20 ppm
```

Soil Gas. Concentrations of contaminants are reported in the post-run report as nanograms of compound. These weights of compounds are converted into a weight per volume unit using the volume of soil gas injected into the GC. The nanograms of compound is divided by the volume of soil gas injected and the units are corrected to read either μg or mg per cubic meter of soil gas. All of these calculations are carried out on the chromatogram and the final values are entered into the appropriate report for the matrix being analyzed.

D.3.8 Quality Control

Quality control data is generated throughout the sample analyses to verify that the concentrations and the identifications are correct. The following are the quality control steps taken to ensure the integrity of the data generated.

Standards. Initial standardization of the instruments are carried out through preparation of known concentrations of the compounds of interest. In some cases a multi-level calibration is carried out.

Blanks. Blank analyses are run each day to determine the presence and level of any contamination from the glassware or any other equipment that may affect the analyses.

Duplicates. Duplicate analyses are run on 20% of all samples to verify the precision of the analyses.

Matrix Spikes. Matrix spike analyses are carried out on 20% of all samples to ensure adequate recovery and quantification of the contaminants in the samples.

QC Standards. Outside standards are run at least once per day to verify the accuracy of the calibration of the instrument.

Internal Standards. Internal standards are added to all samples to adjust the concentration calculation for lower recoveries due to sample interferences and to verify that all the instruments are running properly.

D.4 FIELD INVESTIGATION

The soil gas survey was conducted on 25 October 1990¹ to help identify the source of 1,1,1-trichloroethane found at MW-18. Analyses were conducted on site by Tetra-K Testing of Westfield, Massachusetts with the equipment previously described.

Attempts were made to complete 10 probes. Three (SG-1, SG-2, and SG-3) were abandoned because of the inordinate amount of time it took to penetrate the ground with a rotary hammer. Four probes yielded no sampleable gas because the surficial soil was wet and tight; one of these probes (SG-16) produced sufficient water for a VOC test (trichloroethylene and perchloroethylene were reported present at concentrations below the method quantification limits of 5 and 10 μ g/l, respectively).

Gas samples were collected at SG-17, SG-18, and SG-30. Only the SG-18 sample contained detectable concentrations of VOCs:

Perchloroethylene

0.36 ppm

Benzene

Present below 0.01 ppm

Xylene

Present below 0.15 ppm

The locations of these probes are shown in Figure 2-1 of the summary report.

Originally, 30 soil gas probes had been planned for the investigation. However, because of the wetness and tightness of the soils and the low concentrations present, this portion of the program was curtailed.

The laboratory report and field data sheets follow.

¹Note: 28 October 1990 was incorrectly stated in the Summary Report

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Lawler, Matusky & Skelly Engineers

Data	Sheet	of
200	CITOCL	

SOIL GAS SAMPLING FIELD DATA SHEET FOR BERGSTOL

JOIL GAS SAIVIFLING FILL	D DATA SHEET FOR BENGSTOL
DATE: 10/25/90	LMS JOB #: _535-002
LMS PERSONNEL: E.C. HINCE	LOCATION: <u>Orangehurg</u>
SUBCONTRACTOR: <u>Tetra-K Testina</u>	WEATHER/TEMP:
	MICI.

	T						perce			
SAMPLE POINT #	LOCATION	TIME	SAMPLE PUMP RUN TIME	VACUUM GAUGE READING	FLOW METER READING	CO ₂ (Draeger) (ppm)		0 ₂ (CGI) (%)	HNu READING (units)	COMMENTS
SGI	PLASTIC SOUTH									
\$G2	PLASTIC MFG	0950					/5- 20			5.0; circ
\$63	PLASTIC	1010								Water @ 31 Prev. borehole.
SG 16	E of Maint, Adj. GR		1105-							Water-Heidsp.
SG20										
SG19										
SG 30										
SG 29										
SG18	MOULDING	1445	5min			0.15 % 0.13 % =0.2%	570	20%	+ -	lostrokes on Droeger 5strokes
5618	// ***********************************	1525	2Min				590	20%		
S617	tuel Oil? UST Area	1650	ZMIN			0.2%	_	_		5 strokes
5617	Same	1655	3min			0.35%				10 strakes
								1		
										GT Batt.
										Died
					~~~~~~~~~					
								<u></u>		

### TETRA·K TESTING

Mr. Eric Hince LMS Engineers One Blue Hill Plaza Pearl River, NY 10965

January 8, 1991

Dear Mr. Hince,

Enclosed please find the final data report from the soil gas analysis conducted at the Bergstol/Feldman Site on October 25, 1990.

Two of the soil gas probes were set below the water table, therefore water samples were collected from the probes and analyzed for volatile organic compounds. I have also enclosed a copy of the field data sheet.

If you have any questions or need additional information, do not hesitate to call.

Sincerely

Stephen Knollmeyer

Mobile Laboratory Supervisor

SLK:mac encl.

#### **VOLATILE ORGANICS REPORT**

CLIENT:

Date: 1/8/90

LMS Engineers One Blue Hill Plaza

Sample ID: SG-16(water)

Pearl River, NY 10965

Sample No: n/a

Matrix: Water

Dilution Factor: 1

Project: Feldman Property

Collection Date: 10/25/90 Reciept Date: 10/25/90

Project Number: O-043

Analysis Date: 10/25/90

#### **RESULTS:**

	Detection	Result		Detection	Result		
COMPOUND	Limit ug/L	ug/L	COMPOUND	Limit ug/L	ug/L		
Methylene Chloride	50	ND	Dibromochloromethane	100	ND		
Vinyl chloride	50	ND	1,1,2,-Trichloroethane	10	ND		
1,1-Dichloroethene	5	ND	trans-1,3-Dichloropropene	10	ND		
1,1-Dichloroethane	5	ND	1,1,2,2-Tetrachloroethane	50	ND		
c/t-1,2-Dichloroethene	5	ND	Tetrachloroethene	10	ND		
Chloroform	5	ND	Toluene	5	ND		
1,2-Dichloroethane	20	ND	Chlorobenzene	5	ND		
1,1,1-Trichloroethane	10	ND	Ethylbenzene	5	ND		
Carbon Tetrachloride	10	ND	m-xylene	5	ND		
Bromodichloromethane	100	ND	o&p-xylene	5	ND		
1,2-Dichloropropane	10	ND	Acetone	100	ND		
cis-1,3-Dichloropropene	10	ND	2-Butanone	50	ND		
Trichloroethene	5	ND	4-methyl 2-pentanone	50	ND		
Benzene	5	ND	2-hexanone	50	ND		
ND = Not detected PR = Pre							

#### METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph equipped with PID, FID and ELCD detectors. The sample preparation method was EPA Method 3810; headspace screening method. The results were calculated using the internal standard method.

**COMMENTS:** 

Signed: Steph Karling

Reviewed by:

1 3

Westfield Executive Park 53 Southampton Road Westfield, MA 01085 TEL. 413-562-9193

FAX. 413-562-5317

### TETRA·K TESTING

### **VOLATILE ORGANICS REPORT**

Client:	Date:	1/8/91	
LMS Engineers	Sample ID:	SG-17	
One Blue Hill Plaza	Matrix:	soil gas	
Pearl River, NY10965	Injection volume (ml):	5	
Project: Feldman Property	Collection Date:	10/25/90	
Project Number: O-043	Analysis Date:	10/25/90	

**RESULTS:** 

HESULIS:	DETECTION	DETECTION	RESULT	RESULT
COMPOUND	LIMIT mg/cu. m.	LIMIT ppb v/v	mg/cu. m.	ppb v/v
Methylene Chloride	0.1	20	ND ND	ND
Vinyl Chloride	0.1	20	ND	ND
1,1-Dichloroethene	0.1	15	ND	ND
1,1-Dichloroethane	0.1	15	ND	ND
cis/trans-1,2-Dichloroethene	0.1	15	ND	ND
Chloroform	0.1	10	ND	ND
1,2-Dichloroethane	0.2	40	ND	ND
1,1,1-Trichloroethane	0.6	100	ND	ND
Carbon Tetrachloride	0.1	15	ND	ND
Bromodichloromethane	0.1	10	ND	ND
1,2-Dichloropropane	0.1	15	ND	ND
cis-1,3-Dichloropropene	0.1	15	ND	ND
Trichloroethene	0.1	15	ND	ND
Benzene	0.3	100	ND	ND
Dibromochloromethane	0.1	10	ND	ND
1,1,2,-Trichloroethane	0.1	10	ND	ND
trans-1,3-Dichloropropene	0.1	15	ND	ND
1,1,2,2-Tetrachloroethane	0.1	15	ND	ND
Tetrachloroethene	0.1	10	ND	ND
Toluene	0.4	100	ND	ND
Chlorobenzene	0.5	100	ND	ND
Ethylbenzene	0.5	100	ND	ND
o-xylene	0.7	150	ND	ND
m &p-xylene	0.7	150	ND	ND
Acetone	0.3	100	ND	ND
2-butanone	0.3	100	ND	ND
4-Methyl 2-pentanone	0.4	100	ND	ND
2-Hexanone	0.4	100	ND	ND

ND = Not detected PR = Present but not calibrated for < = less than > = greater than

METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ELCD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

COMMENTS:

Signed: Steph Kully

Reviewed by: 48194

Westfield Executive Park 53 Southampton Road Westfield, MA 01085 TEL. 413-562-9193 FAX. 413-562-5317

### TETRA·K TESTING

#### **VOLATILE ORGANICS REPORT**

CLIENT:

LMS Engineers One Blue Hill Plaza Pearl River, NY 10965 Date: 1/8/90

Sample ID: SG-30(water)

Sample No: n/a

Matrix: Water

Dilution Factor: 1

Collection Date: 10/25/90 Reciept Date: 10/25/90 Analysis Date: 10/25/90

Project: Feldman Property

Project Number: O-043

**RESULTS:** 

	Detection	Result		Detection	Result
COMPOUND	Limit ug/L	ug/L	COMPOUND	Limit ug/L	ug/L
Methylene Chloride	50	ND	Dibromochloromethane	100	ND
Vinyl chloride	50	ND	1,1,2,-Trichloroethane	10	ND
1,1-Dichloroethene	5	ND	trans-1,3-Dichloropropene	10	ND
1,1-Dichloroethane	5	ND	1,1,2,2-Tetrachloroethane	50	ND
c/t-1,2-Dichloroethene	5	ND	Tetrachloroethene	10	ND
Chloroform	5	ND	Toluene	5	ND
1,2-Dichloroethane	20	ND	Chlorobenzene	5	ND
1,1,1-Trichloroethane	10	ND	Ethylbenzene	5	ND
Carbon Tetrachloride	10	ND	m-xylene	5	ND
Bromodichloromethane	100	ND	o&p-xylene	5	ND
1,2-Dichloropropane	10	ND	Acetone	100	ND
cis-1,3-Dichloropropene	10	ND	2-Butanone	50	ND
Trichloroethene	5	ND	4-methyl 2-pentanone	50	ND
Benzene 5 ND		ND	2-hexanone	50	ND
ND = Not detected PR = Pre	esent but not ca	librated for	<pre>&lt; = less than &gt; = greater the</pre>	an	

#### METHOD:

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph equipped with PID, FID and ELCD detectors. The sample preparation method was EPA Method 3810; headspace screening method. The results were calculated using the internal standard method.

**COMMENTS:** 

Signed: Steph Known

Reviewed by: 458 1 9 6

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Westfield Executive Park 53 Southampton Road Westfield, MA 01085 TEL: 413-562-9193

FAX. 413-562-5317

A DIVISION OF TIGHE & BOND, INC.

Data	Sheet	/	of	
Data	OHEEL	,	O1	

### Lawler, Matusky & Skelly Engineers

### SOIL GAS SAMPLING FIELD DATA SHEET FOR BERGSTOL

DATE:	LMS JOB #: 535-002
LMS PERSONNEL: E.C. HINCE/SLK	LOCATION: Orangehurg
SUBCONTRACTOR: <u>Tetra-K Testing</u>	WEATHER/TEMP: SUNNY 60°E

SAMPLE POINT #	LOCATION	TIME	SAMPLE PUMP RUN TIME	VACUUM GAUGE READING	FLOW METER READING	CO ₂ (Draeger) (ppm)	CH ₄ (OVA) (ppm)	O ₂ (CGI) (%)	HNu READING (units)	COMMENTS
Sa-1		0915	_	~	-					NO SAMPLE PER
56-2		0930								
71-3		0943								n 11
St-16 St-20 St-19 St-30 St-22 St-18		1115	12 min	4 mily	0					NATER SAMPLE
56-20		1205		3 mHa	0				INSUFFIC	WATER SAMPLE IENT 1-2m1 420
SG-19		1225	20mw	31N. Ha	0					NO WATER - M
5(730		12.40	15 MIN	3IN. Hg 2IN Hg	boat/m	~				10m/ 450
9-22		1410	30 MIN	4 IN. Ha	0					NO SAMPLE
56-18		1442	1.0MIN		2L/MIN					10ml HzO NO SAMPLE GAS SAMPLE
54.17		1648	1.0	OIN Hy	2L/M0					11
					Ĺ					

M Steve Knollmeyer of Tetra K From E.C. Hince	MEMORANDUM OF CONVERSATION
JOB. Berastal/FlintKote RT	DATE: 1/17/91
JOB NUMBER: 535-005	TIME: 1045
Did we get a trace hit on a	hood space (GW)
concerning: Soil Gas Data Deport  Did we get a trace hit on a  AND DECIDED: Scriple near Greenbush	Road.
Original Sample SG-16 (He Showed & Ippb TCE	uo space
Duplicate of SG-16, 101- peaks TCE = 2.0 pp  Steve would call these trace	entifiable
- peaks TCE = 2.0 p	ob PCE = 2.7ppb
below detection limits).	e. ( ) - There, b
- FERTON GET CETTON MITH 5	
	•
	Particular de la company
	Cold
CC: SIGNED: (	
- Oldites:	er, Matusky & Skelly Engineers

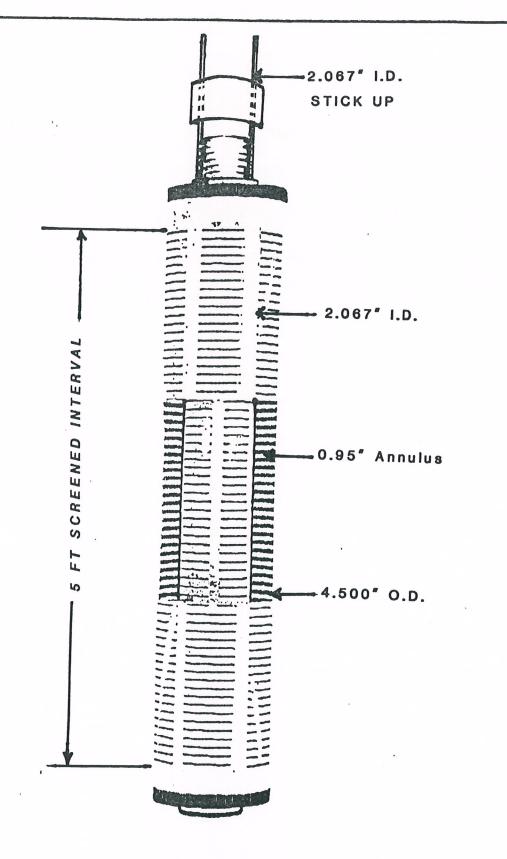
B-21	86.58
PP-1	86.02
PP-2	94.34

The well construction logs are attached. Some well construction logs show two static water level measurements. In such cases, the water level with the graphic symbol is the level after development; the one with the well data is the level after construction. Construction involved standard hollow stem auger practices for shallow wells. Materials, split spoons and augers were steam cleaned between holes. Augers had 4.25 in I.D, and 8 in O.D. for the monitoring well drilling and 6 in O.D. for the piezometer construction.

The installation of a prepacked well within a backhoe test pit is a non-standard procedure, which is detailed below. A 5 ft section of prepacked dual wall well screen (2.067 in. I.D.) combines inner well screen (0.10 slot), filter #0 sand pack and outer well screen (4.5 in. O.D.) in one integrated unit which was installed using a temporary 10 ft section 8 in. I.D. PVC casing. Following the excavation, the temporary casing was quickly positioned at one side of the pit close to the vertical side wall. The hole was backfilled with soil to 5 ft below grade. One ft of sand was added before installing the prepacked screen well inside the temporary casing. The annular space between the casing and the prepacked well was filled with a second layer of #00 sand pack to 1 ft above the screen. The prepacked well bottom was placed 3-4 ft below the apparent top of the water table.

The temporary casing was slowly removed as additional sand pack was placed into the temporary casing. The prepacked well was equipped with 2 in. I.D. PVC casing stick up to 2 ft above grade and the soil was compacted tight around the well.

The overburden (primarily silt and clay) maintained an open 8 in. hole after removing the temporary casing. This allowed the remaining upper part of the hole to be grouted to the surface.



PVC PRE-PAC

				777-11	11				
Loc	atio	n _C	Orang	ebur	g. NY				Ground Surface Elevation <u>91.76 feet</u>
Geo	logi	st .	Tari	k Zar	rrouk				Depth to Water <u>4.98 feet</u>
DEPTH			BORIN	G INF	ORMAT	ION		GRAPHIC	LITHOLOGIC DESCRIPTION
IN FEET	В	lows or	Sampl	er		•		SYMBOL	ETHIOLOGIC SESSIEFTION
-0	<u>.</u> 9-0	6-12°	12-18"	18-24"	Recovery	Instruct.	Reading		
	4	100	00	00	1.0	A	0	Δ Cd	Dark gray v.f. silty sand , some clay, little gravel size fragements, trace of wood (moist).
								□ Ct	Concrete mixed with top soil (moist).
-2								ss ss ss	Red—Brown mf. loose sand, some silt (wet).
<b>-</b> 4	3	4	12	16	1.2	A	0	SS ∑	Ad—Brown silty sand, some m. sand, little oil sheen (wet)
-6	14	18	17	14	1.6	A	0	8: 4: 4 8: 5: 5 8: 6: 6 8: 8: 8	Red—Brown silty sand with oil stain, some clay, little m. sand (wet).
-8	7	11	11	33	1.6	A	0	GS GS	Geenish f. sand with mica ,some red—brown silty sand(wet)
J								**	Brown m–f. sand, some silt and clay,no remarks of oil.
-10	13	42	24	13	1.1	A	0	8 S S S S S S S S S S S S S S S S S S S	The same above (wet).
-12	2	7	31	45	1.4	A	0	a a a B B S B B S B B B S	Light brown f. sand , some silt ,little gravel size stones (wet).
-14	12	19	38	35	1.8	A	0	Ys	Yellow v.f. silty sand mixed with weathered rocks (wet).
17								8 8 5 8 8 8 8 8 8 8 8 8	Ad-Brown silty sand , some weathered greenish fragements  Lawler, Matusky & Skelly Engineers
-16								A: A: A	

Pro	ject	Nam	e _F	lint	kote				Date <u>13 Nov 90</u>
Pro	ject	No.	_53	35-00	5				Total Depth <u>12 feet</u>
Cli	ent	Ber	rbor	Real	ty.				Hole Diameter <u>8 in.</u>
Loc	atio	n _	Orang	ebur	q. NY	,			Ground Surface Elevation <u>90 feet</u>
	T								Dept. to Nate.
DEPTH IN FEET	<u> </u>				ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	1	lows or	7	Y	2	نيا	[ P		
<u> </u>	904	6-12	o <u>1</u> 2-18"	348-24"	Becovery	Instruct	Reading		
	10	7	100	00	.20	A	0	CG C	Poor recovery ,Top soil mixed with crushed fragements of bricks and some sand (dry) .
-2 -4	1	200	100	17	.8	A .	0	Cd C	Top Soil gray v.f. sand ,some silt, little roots. and gravel (dry).
<b>—</b> 4	•	200	100	1		^		Δ Cd	The same above (moist).  Red—Brown silty f. sand getting finer toward
-6	8	8	9	7	.8	A	0	G A A A A A A A A A A A A A A A A A A A	the bottom with some clay (wet).
_ 8	35	3	24	17	.9	A	0	A A G	
-10	6	3	6	12	1.2	A	0	cl cl	Red-brown clay , some silt , little v.f. sand (wet) .  The same above (wet) .
-12									Lawler, Matusky & Skelly Engineers

Pro	oject	Name	e _F	lint	kote				Date <u>9 Nov 90</u>
Pro	oject	No.	_53	<u>35-00</u>	5				Total Depth <u>4 feet</u>
Cli	ent	Ber	rbor	Real	ty.				
Loc	atio	u _	<u>)rano</u>	jebur	g. NY				Ground Surface Elevation <u>93 feet</u>
Geo	logi	st .	Tari	k Zar	rrouk				
DEPTH			RUBIN	IC THE	ORMAT			GRAPHIC	
IN FEET	В		n Sampl		)	TUN		SYMBOL	LITHOLOGIC DESCRIPTION
	.9-0	6-12"	12-18"	18-24"	Recovery	13	Reading		
-0	6	ф	ğ	8	Pec	Instruct	Pea	- A . 1 Cd	
-2	נז	40	12	30	1.3	A	0		Top soil mixed with crushed fragements of bricks and some sand (dry)
-4									Poor recovery, crushed stones little sand. mixed with concrete , augered to 4 ft. (dry).  Lawler, Matusky & Skelly Engineers

Pro	oject	: Nam	e _F	lint	kote				Date _12 Nov 90
I			_53						
1									
									Country Charles Charles St. St. St. Fall
1									STOCKE CONTROL ELEVACION REPORT OF THE PROPERTY OF THE PROPERT
	1109.	St .	10,	N 66	LIUUIN				Depth to Water <u>1.45 feet</u>
DEPTH IN FEET					ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
211		1	n Sampl	7	1 >	Ι.;	T 50	STFIDUL	
	.9-0 m	.ze-12"	JI2-18"	D18-24"	Recovery	Instruc	Reading		
-0		-	15	4	-	ug-r	17	△ Cd	Poor recovery , Top soil mixed with crushed fragements
								0.0	of bricks and some sand. (MOIST)
								7 1	
								о 6 д	
-	-				. 36	1	9		Telling Conservation Conservati
								$\nabla$	leads of growth, long
								- 00	
-2	5	100	00	00	.20	A	0		the series and the series are the series and the series and the series are the series and the series and the series are the series are the series are the series and the series are the se
_	E		DC.	-				© △ 2	
									Disprovided of brown-values of part and red by low of a
								0.9	
								7 1	
								۵۵	feliate Brown fine word, over a it. little slay
-6		42		-373		A .			Trace of gravels, so jet
								00	
-4	7	66	25	13	1.4	A	0	0 1	
									Red-brown silty sand , some clay, little mc. sand and gravel mixed with oil. (WET)
-8	12	-	21	-81	.94	1	0	a a a	
								Ω Ω α • • •	Without B-F Hearth Stone Silit-Bad City, little gran-with Water told Wilson and of Mariata Door lotter people was
								A : A : A	collected were mail toward. Next
								a a a	
								A : A : A :	
- 10				67				α α α	tight had vid part town tilt witchey, trace of
-6	23	12	13	12	1.3	A	0	*:*: *:*: sS	Pod-Pooks cilby cond come also coil colorated with
								9.8.8	Red—Brown silty sand, some clay , soil saturated with oil.(WET)
								0.0	
- 12	34	26	26	В				A : A : C	
								Q ` Q ` C ∵ O ∵ O ·	
								a∵a∵a ∵o∵o	
								a``a``d	Lawley Waturky C. Challe Carl
								a a a	Lawler, Matusky & Skelly Engineers
-8								127/27/27	

Pro	oject	: Nam	e _F	lint	kote				Date <u>08 Nov 90</u>
Pro	oject	No.	_53	5-00	5				Total Depth <u>14 feet</u>
C1:	ient	Ber	rbor	Real	ty.				
Loc	catio	n _	Orang	eburo	J. NY	•			
Geo	ologi	st .	Tari	k Zar	rouk				
DEPTH	T							ODARUTO I	
IN FEET	-	Blows or	BORIN		ORMAT 1	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
		1	T	7	rg.	4	E.		
Lo	90	6-12"	12-18"	18-24"	Recovery	Instruct	Reading		
								EEE CSo	Dark gray top soil mixed with f. sand, roots, and gravel
	1	4	10	17	1.5	A	0	222	Trace of coarse sand . (Saturated with oil).
	1	"	10	1	1.5	^	0		
				_			_	<u> </u>	
-2	8	4	4	5	1.9	A	0	<u>∞∞u</u> CSo	The same above (moist).
								<del>                                    </del>	
								27.27.1 27.27.1	
-4	4	12	14	14	1.5	A	0	<u> </u>	
								EEE CSo	
								2.2.2	
								A A A SS	Ad-Brown silty sand, some m. sand mixed with Oil (wet).
-6	6	12	14	6	1.9	A	0	0.0	
			,					°°° sS	Red-Brown m. sand , some silt and f. sand mixed with Oil (wet) .
								Q : Q : Q	off (Met)
								A A A	
	15			,				a∵a∵a ∵•∵•	
-8	10	9	9	7	1.5	A	0	and sS	Red-Brown m.—c. sand , some gravel, little silt and clay
								9 9 9	mixed with oil (wet).
					41				
								G G G	
-10	10	9	12	14	1.2	A	0	* * * sS	4
								a a a a	
								a`a`a `o`o.	
-12	14	19	19	31	1.7	A	0	A` A` α ∵ ο ∵ ο ∶	
								sS	The same above , increasing % of clay (wet).
								A A A	
								o o	
								P . A . A	Lawler, Matusky & Skelly Engineers
-14								(%:00)	<u> </u>

Pro	piect	: Nam	e f	lint	kote				Date _11 Nov 90
				35-00					
1									
1									
1					rrouk				
DEPTH	Ī		DODE						
IN FEET	-	Blows o			ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	200	1	1	1	dg.	¥	l g		
Lo	. <u>9</u>	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
-2	1	2	5	5	.30	A	0	CS	Dark gray top soil mixed with f. sand, roots, and gravel Trace of coarse sand (moist)
-4	7	18	62	43	1.0	A	0	a. a	Red-brown silty sand , some clay, little weathered schist (moist to wet) .
-6	23	27	13	9	1.1	A	0		
-8	9	15	20	22	1.2	A	0	10000000000000000000000000000000000000	
-10	14	25	25	23	1.6	A	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
-12	13	95	23	20	1.5	A	0		
-14								8	Lawler, Matusky & Skelly Engineers -

Pro	oject	Name	e _F	lint	kote			Date _05 Nov.90
1								Total Depth <u>16 feet</u>
1								Hole Diameter <u>6 in.</u>
								Ground Surface Elevation <u>85.18 feet</u>
								Depth to Water 2.53 feet
DEPTH IN FEET	<u></u>				ORMAT	ION		GRAPHIC LITHOLOGIC DESCRIPTION
	The same of the same of	lows or	_	7	5	ندا	9	
	9	6-12'	12-18"	18-24"	Recovery	Instruct.	Reading	
<u></u>								CS Poor recovery of top soil and ashes ,
								Loose materials and little gravels and roots (moist).
<u>-2</u>	5	7	7	8	.20	A	0	
							J	SS Brown m. to f.sand, some silt, little clay
								Trace of gravels and roots (moist).
<u>-</u> 4	7	70	28	60	1.66	A	0	(
-								SS Dark Brown—Red m.—f.sand with some roots and leaves(wet
								QT Weathered crushed quartz and m.—c.sand, some f.sand(wet
-6	12	109	33	31	1.2	A	0	0.0
								Red— Brown f. sand with thin layers of very weathered coarse sand, some gray gravels (wet).
								A A A A A A A A A A A A A A A A A A A
								\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
<u>-8</u>	32	22	12	17	1.0	A	0	(
								SS Red—Brown silty f. sand with some c. sand (wet).
								0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-10	2	8	9	15	1.6	A	0	(*************************************
								SS The same above. (wet) .
								<del> </del>
-12	27	22	15	21	1.2	A	0	(0 (0 ) (0 ) (0 ) (0 ) (0 ) (0 ) (0 ) (0
12								SS The same above (wet).
								\(\bar{\chi}\chi\chi\chi\)
L ₁₄	10	8	9	20	1.1	A	0	(0 0 0 ) (0 0 0 ) (0 0 0 ) (0 0 0 0 )
[ 14		_	_				٦	AAA SS Ad-Brown mf. sand, some silt and c. sand with weathere
								avaid Crushed green quartz and light sandstone (Wet).
								Lawler, Matusky & Skelly Engineers
L 1 =								A A A A
-16								

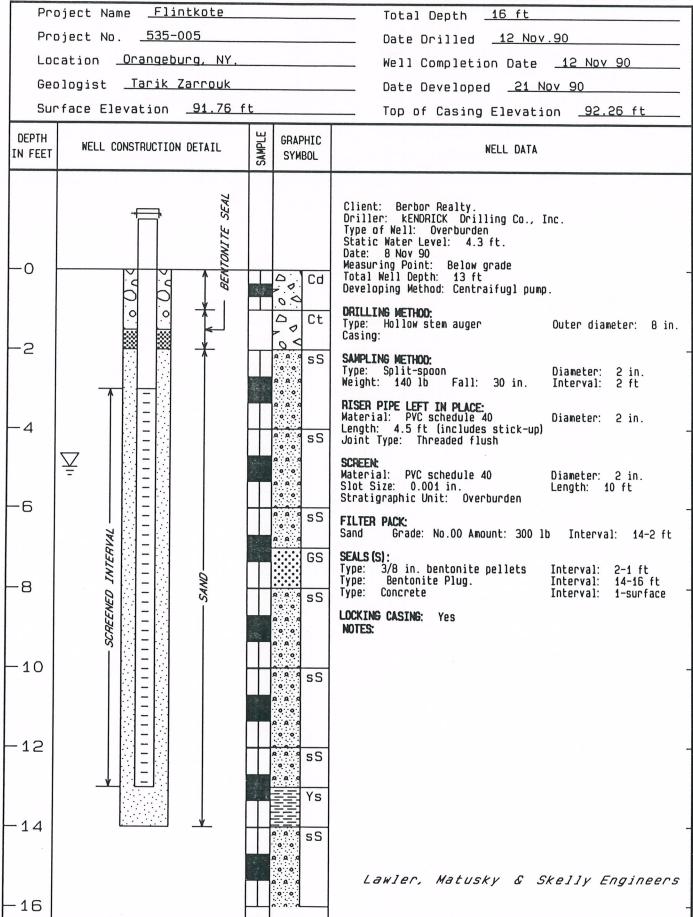
Pri	oject	. Nam	e _f	lint	kote				Date <u>07 Nov 90</u>
Pro	oject	: No.	_53	35-00	5				Total Depth <u>14 feet</u>
C1:	ient	_Be	rbor	Real	ty				Hole Diameter <u>6 in.</u>
Loc	catio	n _	Orano	ebur	۱ رو	1			Ground Surface Elevation <u>92.59 feet</u>
Geo	ologi	st	Tar:	ik Za	rrouk	:			Depth to Water <u>5.13 feet</u>
DEPTH	Π		DODI	10 711				CDADUTO	
IN FEET		Blows o			FORMAT	10N		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
		T	1	T	3	نيد	E E		
	<u>.</u> 9-	6-12°	12-18"	18-24"	Recovery	Instruct	Reading		
								△ Cd	Construction Debris and concrete mixed with asphalt
								0.9	Auger to 6 ft.
-2									-
								000	
								7 1	
L ₄									•
-									1
								0 0	
								<u>г</u> д	
-6	7	6	12	11	1.1	A	0	a∵a∵a sS	Red—Brown silty f. sand, little m. sand , trace of
								0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	gravel size stones. (moist)
								0.00	
								[].[].[] [].[].[].[].[].[].[].[].[].[].[].[].[].[	
-8	6	10	6	14	1.2	A	0	8 8 9 0 0 0 0	
							·	a . a . d	The same above (moist).
								a∵a∵a ∵o∵o:	
								a a a	
								A A A	
-10	6	22	18	13	.90	Α	0	* * sS	Dod- brown cilty v 6 and mixed with forward of
								sS see	Red— brown silty v.f. sand mixed with fragments of weathered siltstone— sandstone .(wet)
								0 0	
								Q∵Q∵Q ∵Q∵Q:	
-12	63	77	10	8	1.5	A	0	a · a · a · o · o	
15				٦	1.5		١	* * * sS	The same above.
								lo o d	
								0 0 0 0 0 0 0 0 0	
								0 0 0 0 0 0	Lawler, Matusky & Skelly Engineers
-14								0.0	
					-				

Pro	oject	Nam	e _F	lint	kote			Date <u>07 Nov 90</u>
1								Total Depth <u>14 feet</u>
1								Hole Diameter <u>6 in.</u>
Loc	catio	n _0	Orang	ebur	g, NY			Ground Surface Elevation <u>88.93 feet</u>
Geo	ologi	st .	Tari	k Zar	rrouk			Depth to Water <u>2.94 feet</u>
DEPTH			DODIN	C THE	ODMAT	TON		GRAPHIC
IN FEET	E		n Sampl		ORMAT	IUN		SYMBOL LITHOLOGIC DESCRIPTION
	<u>.</u> 9	6-12"	12-18"	18-24"	Recovery	į	Reading	
-0	6	ı,	헊	幕	28	Instruct	Fea	
								Poor recovery .Top soil mixed with crushed fragements of bricks and some sand (dry) .
	4	8	78	44	.20	A	0	
								[ · [ · Ø. ] · [
-2	4	6	100	00	.20	A	0	
						ī		
-4	5	5	4	5	1.3	A	0	
_4					1.0	^		A A A SS Red-brown silty sand , some clay, little mc. sand
								A CA
	_	4.5						\$\frac{40000}{40000}
-6	5	15	36	17	1.3	A	0	ASAS SS Red-Brown silty sand some clay little gravel size
								िँ ें crashed quartz (wet) .
								00 00 00 00 00 00 00 00 00 00 00 00 00
								(*************************************
-8	8	12	16	17	1.1	A	0	SS Red—Brown silty f. sand and is getting coarser toward
								Red—Brown silty f. sand and is getting coarser toward the bottom (wet).
								(10.50) (20.00) (20.00) (20.00) (20.00)
								[
-10	12	19	16	19	1.0	A	.4	0000
								SS Red—Brown m.—f. sand, little c. sand and silt, trace of clay (wet).
								A(A)A (8)8
_ 4 \	8	10	14	17	0.2		0	
-12	٦	10	-7	11	٠.٤	^	٦	SS Poor recovery of wet red—brown m. sand.
								\$1.500
								AVANA AVANA AVANA
								Lawler, Matusky & Skelly Engineers
-14			l					

Pro	oject	. Nam	e _E	lint	kote				. Date <u>06 Nov 90</u>
								7	
Loc	atio	n _	Orano	ebur	g , N	N			Ground Surface Elevation <u>86.97 feet</u>
Geo	ologi	st .	Tari	k Za	rrouk				Depth to Water <u>3.35 feet</u>
DEPTH			RORIN	IG THE	ORMAT	TON		GRAPHIC	
IN FEET	E		n Sampl			TUN		SYMBOL	LITHOLOGIC DESCRIPTION
-0	.9-0	6-12"	12-18"	18-24"	Recovery	Instrut.	Reading		
-2								C C C C C C C C C C C C C C C C C C C	Poor recovery , Top soil mixed with crushed fragements of bricks and some sand. No sample was taken and augered to depth of 3 ft.
-4	5	18	59	20	1.3	A	0	9:1 YS	Interbedded Yellow f. sand and red—brown silty sand some m.—f. sand at the bottom . (wet)
-6	25	40	18	22	1.3	A	0	ss ss	Red— brown silty sand , little gravel size stone, trace of clay. (wet)
-8	3	17	42	15	1.0	A	0	s ss	The same above. (wet)
-10	14	16	18	14	1.3	A	0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.	Red—Brown m.—f. sand, little c. sand and silt, trace of clay.(very wet)
-12	12	6	4	9	.6	A	0	SS	The same above. (wet)
-14								[1808]	Lawler, Matusky & Skelly Engineers

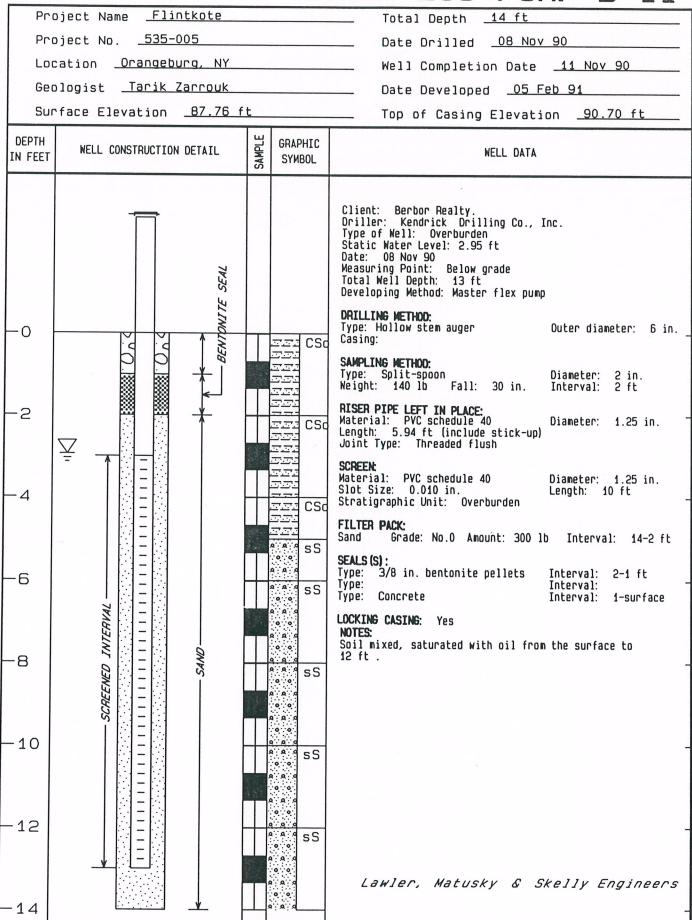
Pro	ject	: Nam	e _E	lint	kote				Date <u>06 Nov 90</u>
Pro	ject	No.	_53	35-00	5				Total Depth <u>13 feet</u>
Cli	ient	Bei	rbor	Real	ty.				
Loc	atio	n _	Orang	ebur	, NY	•			Ground Surface Elevation <u>85.17 feet</u>
Geo	ologi	st .	Tari	k Zar	rrouk				
DEPTH	T		DODIN	10 TUE	ODIAL	TOU		GRAPHIC	
IN FEET	-	Blows or			ORMAT	IUN		SYMBOL	LITHOLOGIC DESCRIPTION
			T	7	Ę,	ig.	8		
Lo	.9-0	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
	3	13	17	23	1.2	A	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Dark gray top soil, some leaves and roots, mixed with some black coal and ash materials. (dry)
-2	12	7	12	9	1.4	A	0	B Q	Red-brown silty sand , some clay, little m.—c. sand
<u> </u>	7	15	32	29	1.1	A	0		and gravel, trace of ash. (moist)
	22	98	36	34	.7		0	ss ***	Red-Brown silty sand, some clay , little gravel size crushed quartz. (wet)
-6 -8	9	11	12	11	1.3	A	0	SS SS SS SS SS SS SS SS SS SS SS SS SS	Red—Brown silty f. sand , some crushed rocks, little m. sand and clay. (wet)
					1.5		J	a	The same above.
-10	33	24	13	26	1.5	A	0	ਕੁਕਰ sy ਕੁਕਰ ਕੁਕਰ ਕੁਕਰ ਕੁਕਰ	Yellow mf. loose sand, interbedded with red- brown silty sand. (wet)
-12								55555 57555 57555 57555 57555 57555 57555	
								ਕੁਕਰ ਕੁਕਰ ਕੁਕਰ ਕੁਕਰ	The same above. Lawler, Matusky & Skelly Engineers

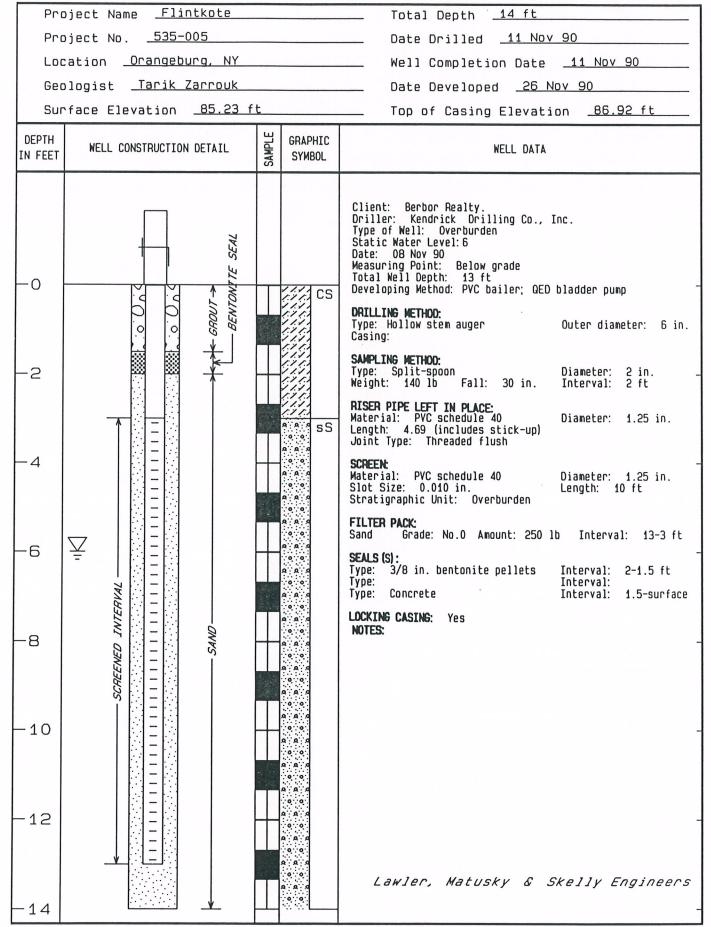
Pr	oject	: Nam	e _F	lint	kote				Date _06 Nov 90
									_
									•
1									
DEPTH	T								
IN FEET	-	Blows o			ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	1	T	7	7	er,	i.	g		
Lo	<u>9</u>	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
	1	6	11	13	1.6	Α .	0	Ca Ca	Dark gray top soil, some leaves and roots, mixed with some black coal and ash materials (dry).
-2	9	7	14	9	1.2	A	0	a a a	Red-brown silty sand , some clay, little m.—c. sand and gravel, trace of ash (dry).
-4	8	18	33	39	1.7	A	0	A A A A A A A A A A A A A A A A A A A	Pod Provincial Control of the Contro
								- 000 000 000 000 000 000	Red-Brown silty sand, some clay , little gravel size crushed quartz (moist) .
-6	81	114	31	33	.8	A	0	8	Red—Brown silty f. sand , some crushed rocks, little m. sand and clay (wet).
<del>-</del> 8	3	8	13	15	1.8	A	0	a a a a a a a a a a a a a a a a a a a	The same above.
-10	21	22	23	22	1.5	A	0	SEE SY SEE SEE SEE SEE SEE SEE SEE SEE S	Yellow mf. loose sand, interbedded with red— brown silty sand (wet). —
-12								STATE	The same above.  Lawler, Matusky & Skelly Engineers



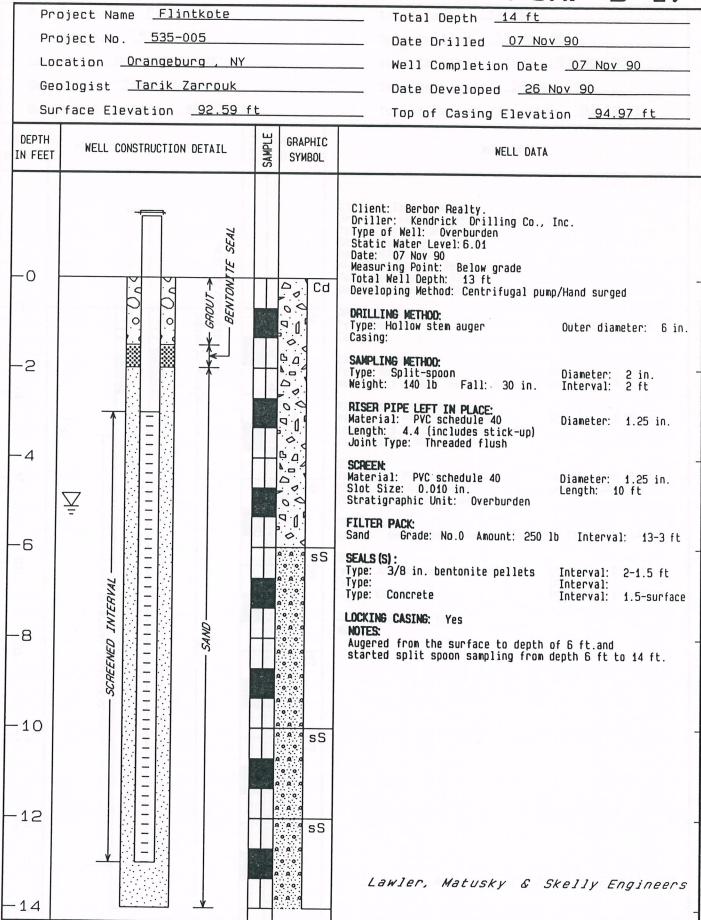
				WLLL LOU I UN. D-0
Pro	ject Name <u>Flintkote</u>			Total Depth <u>8 ft</u>
Pro	ject No. <u>535-005</u>			Date Drilled <u>12 Nov 90</u>
Loca	ation <u>Orangeburg, NY</u>			Well Completion Date 12 Nov 90
Geo	logist <u>Tarik Zarrouk</u>			Date Developed <u>26 Nov 90</u>
Sur	face Elevation <u>89.23 f</u>	t		Top of Casing Elevation <u>ft</u>
DEPTH			GRAPHIC	•
IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	SYMBOL	WELL DATA
		0,		
	. SEAL			Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 1.45 Date: O7 Nov 90 Measuring Point: Below grade Total Well Depth: 8 ft Developing Method: Centrifugal pump
Lo L	1111			<b>DRILLING METHOD:</b> Type: Hollow stem auger Outer diameter: 6 in
				Type: Hollow stem auger Casing:  SAMPLING METHOD: Type: Split-spoon Neight: 140 lb Fall: 30 in. Interval: 2 in.  RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 4 ft (include stick -up) Joint Type: Threaded flush  SCREENt Material: PVC schedule 40 Slot Size: 0.010 in. Stratigraphic Unit: Overburden  FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 8-1.5 ft  SEALS (S): Type: 3/B in. bentonite pellets Type: Concrete  LOCKING CASING: Yes NOTES:  Outer diameter: 6 in  Diameter: 2 in. Interval: 2 ft  Diameter: 1.25 in. Length: 10 ft  STATEMENT OF THE PACK: Sand Grade: No.0 Amount: 250 lb Interval: 8-1.5 ft  Interval: 1.55 ft Interval: .5-surface  LOCKING CASING: Yes NOTES:
-8			::	Lawler, Matusky & Skelly Engineers -

				WLLL LUG FUR. B-9
	oject Name <u>Flintkote</u>			
	oject No. <u>535-005</u>			
	cation <u>Orangeburg</u> , NY.			
1	ologist <u>Tarik Zarrouk</u>			
Sur	face Elevation <u>85.85 f</u>	t		Top of Casing Elevation <u>87.35 ft</u>
DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA
-0	\tag{7}		CT	Client: Berbor Realty. Driller: kENDRICK Drilling Co., Inc. Type of Well: Overburden Static Water Level: 3.1 ft. Date: B Nov 90 Measuring Point: Below grade Total Well Depth: 13 ft Developing Method: Centraifugl pump/Hand surged
-2	0.0.7		77 YS	ORILLING METHOD: Type: Hollow stem auger Outer diameter: 6 in. Casing:  SAMPLING METHOD: Type: Split-spoon Diameter: 2 in.
-4	¥ 1	100	i ss Ys	Weight: 140 lb Fall: 30 in. Interval: 2 ft  RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 4.5 ft (includes stick-up) Joint Type: Threaded flush  SCREEN: Material: PVC schedule 40 Slot Size: 0.010 in. Stratigraphic Unit: Overburden
-6	1   1   1   1   1   1   1   1   1   1		YS	FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 14-2 ft  SEALS(S): Type: 3/8 in. bentonite pellets Interval: 2-1.5 ft Type: Interval: 1.5-surface  Type: Concrete Interval: 1.5-surface
-8	SCREENED INTERV		A.A. SS	Type: Concrete Interval: 1.5-surface  LOCKING CASING: Yes NOTES: Measured SWL was higher than what was indicated in soil.
-10	509 		Ss	
-12				
-14				Lawler, Matusky & Skelly Engineers -





Pro	oject Name <u>Flintkote</u>			Tatal Backs 46 ft			
1							
1	oject No. <u>535-005</u>						
	cation <u>Orangeburg, NY.</u>						
1	ologist <u>Tarik Zarrouk</u>						
Sur	Surface Elevation <u>85.18 ft</u> Top of Casing Elevation <u>86.81 ft</u>						
DEPTH IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	GRAPHIC SYMBOL	WELL DATA			
-0	7   SEAL		cs cs	Client: Berbor Realty. Driller: kENDRICK Drilling Co., Inc. Type of Well: Overburden Static Water Level: 2.53 ft. Date: 5 Nov 90 Measuring Point: Below grade Total Well Depth: 15 ft Developing Method: Centrefugal pump/hand surged			
-2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			DRILLING METHOD: Type: Hollow stem auger Outer diameter: 6 in. Casing: SAMPLING METHOD:			
			S S	Type: Split-spoon Diameter: 2 in. Weight: 140 lb Fall: 30 in. Interval: 2 ft  RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 1.25 in.			
-4	<u> </u>		sS a gt	Length: 6.63 ft(includes stick-up) Joint Type: Threaded flush  SCREEN: Material: PVC schedule 40 Diameter: 1.25 in.			
-6			00 55	Slot Size: 0.010 in. Length: 10 ft Stratigraphic Unit: Overburden  FILTER PACK: Sand Grade: No.0 Amount: 300 lb Interval: 16-3.5 ft.			
-8		Н	a SS	SEALS (S): Type: 3/8 in. bentonite pellets Interval: 3.5-1.5 ft. Type: Interval: 1.5-surface - LOCKING CASING: Yes			
-10	SCREENED INTERVAL		8 S S	NOTES:			
-12	50%	Н	**** **** **** sS	-			
-14			a a s	_			
-16				Lawler, Matusky & Skelly Engineers -			



D= -	oject Name <u>Flintkote</u>	Tabal Bash 13 ft
	oject No. <u>535-005</u>	
	cation <u>Orangeburg, NY</u>	
	ologist <u>Tarik Zarrouk</u>	
Sur	face Elevation <u>85.05 f</u>	t Top of Casing Elevation <u>86.58 ft</u>
DEPTH IN FEET	WELL CONSTRUCTION DETAIL	GRAPHIC SYMBOL WELL DATA
-0	Since the seal of	Client: Berbor Realty. Driller: Kendrick Drilling Co., Inc. Type of Well: Overburden Static Water Level: 4.3 Date: 07 Nov 90 Measuring Point: Below grade Total Well Depth: 12 ft Developing Method:  DRILLING METHOD: Type: Hollow stem auger Casing:  October 12 Cd  October 12 Cd  October 12 Cd  October 13 Cd  October 14 Cd  October 15 Cd  October 15 Cd  October 16 Cd  October 17 Cd  October 17 Cd  October 17 Cd  October 18 Cd
-2		SAMPLING METHOO: Type: Split-spoon Neight: 140 lb Fall: 30 in. Interval: 2 ft
-4 -6	ERVAL	RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Length: 3.53 (includes stick-up) Joint Type: Threaded flush  SCREEN: Material: PVC schedule 40 Since the stick of the strategraphic Unit: Overburden  FILTER PACK: Sand Grade: No.0 Amount: 250 lb Interval: 13-1.5 ft  SEALS (S): Type: 3/8 in. bentonite pellets Interval: 1.55 ft Type: June: Concepts  Type: Type: June: Concepts  Type: Type: Concepts  Type: Type: Concepts  Type: Type: Concepts  Material: PVC schedule 40 Diameter: 1.25 in. Length:
-8		LOCKING CASING: Yes NOTES:
-10		
-12	<u> </u>	Lawler, Matusky & Skelly Engineers

Pro	oject Name <u>Flintkote</u>			Total Depth <u>8 ft</u>
Pro	oject No. <u>535-005</u>			Date Drilled <u>20 Feb.91</u>
Loc	cation <u>Orangeburg</u> , NY.			Well Completion Date <u>20 Feb. 91</u>
Ged	ologist <u>Tarik Zarrouk</u>			
Sur	rface Elevation <u>ft</u>			·
DEPTH			GRAPHIC	
IN FEET	WELL CONSTRUCTION DETAIL	SAMPLE	SYMBOL	WELL DATA
		0,		
			-	Client: Berbor Realty. Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 25 Feb 91 Measuring Point: Below grade Total Well Depth: 7 ft Developing Method: Master-flex pump  DRILLING METHOD:
				Type: Backhoe Outer diameter: 6 in. Casing:
<b>⊢</b> 0	0 0		ST O C	SAMPLING METHOO: _ Type: Diamter : Weight: Fall: Interval:
				RISER PIPE LEFT IN PLACE: Material: PVC schedule 40 Diameter: 2 in. Length: 4.10ft (includes stick-up) Joint Type: Threaded flush  SCREEN:
-2	<b>—</b>		000	Material: PVC schedule 40 Diameter: 2 in. Slot Size: 0.010 in. Length: 5 ft Stratigraphic Unit: Overburden —
٠			ered sS ered ered ered ered	FILTER PACK: Sand Grade: No.O Amount: 150 lb Interval: 7-2 ft Sand Grade: No.OO Amount: 200 lb Interval: 8-1 ft SEALS(S):
. , .		1		Type: 3/8 in. bentonite pellets Interval: Type: Interval: Type: Interval 2-surface.
	7876			LOCKING CASING: Yes
-6				NOTES: A prepack 5 ft section of 2 in. screen, surrounded with additional filter sand, was installed with temporary casing at 7 ft deep for water monitoring and sampling.   Lawler, Matusky & Skelly Engineers
-8				-

Project Name Flintkote Total Depth 8 ft  Project No. 535-005 Date Drilled 08 Feb.91  Location Orangeburg, NY. Well Completion Date 08 Feb. 91  Geologist Tarik Zarrouk Date Developed 25 Feb. 91  Surface Elevation ft Top of Casing Elevation ft  DEPTH IN FEET WELL CONSTRUCTION DETAIL SYMBOL Client: Berbor Realty.  Driller: TANK TECH.  Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb. 90	
Location Orangeburg, NY.  Geologist Tarik Zarrouk  Surface Elevation _ft	
Geologist Tarik Zarrouk  Surface Elevation ft  DEPTH IN FEET  WELL CONSTRUCTION DETAIL  Client: Berbor Realty. Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90	
Surface Elevationft Top of Casing Elevationft DEPTH IN FEET WELL CONSTRUCTION DETAIL GRAPHIC SYMBOL Client: Berbor Realty.  Client: Berbor Realty. Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90	
DEPTH IN FEET WELL CONSTRUCTION DETAIL  GRAPHIC SYMBOL  Client: Berbor Realty. Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90	
Client: Berbor Realty. Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90	
Driller: TANK TECH . Type of Well: Overburden Static Water Level: 4.75 FT Date: 8 Feb 90	
Measuring Point: Below grade Total Well Depth: 8 ft Developing Method: Master flex pump  ORILLING METHOD: Type: Backhoe Outer diameter: 6 Casing:	in.
SAMPLING METHOD: Type: Dianter:	-
Todats   Type:   New   New	urface. th - ng ampling

APPENDIX F

TEST PITS

#### APPENDIX F

#### **TEST PITS**

#### 18 January 1991

On 18 January 1991 a backhoe was mobilized to access a subsurface tunnel shown by the fire insurance map to lead from the center of Block 754 to the immediate vicinity of MW-18. The equipment was operated by Tank Tech of Congers, NY, subcontractor to LMS. It had been theorized that, in light of the generally low VOC concentrations measured in the Block 754 groundwater samples (Chapter 3 of the Summary Report), the tunnel may have been the route by which chemicals migrated to MW-18. The excavation confirmed the presence of a tunnel, with a wide (more than 5 ft) passageway oriented nearly west to east. This main passageway terminated about 20 ft east of the opening. It could not be determined whether or not the termination of the tunnel was due to collapse, or because it had been filled at that location. LMS' crew observed debris from an automobile and refrigerator in the main passageway. A narrower (3-4 ft wide) passageway oriented perpendicular to the main tunnel (N-S) was observed to discontinue at a wall 10-15 ft south of the excavation opening. Several pipes were observed to pass through the wall at that location. Deep water (approximately 4 ft and obstructions precluded a walk-in inspection of the tunnel.

The excavation was expanded in the direction of the underground tanks suspected as being present from the November 1990 GPR survey. The excavation did not uncover any tanks at this location; rather two backfilled chambers were revealed. These chambers were separated by 1-2 ft wide brick walls. Other excavations were conducted south and east of the first excavation in order to attempt further access to the tunnel network. No additional access points to the tunnel network were uncovered.

A test pit dug just northeast of a line between B-11 and MW-22 uncovered (see Plate 1 of the Summary Report) oil in the soil and shallow groundwater to a depth of approximately 4-5 ft. Oil and water were observed to flow into the pit from strata along its west, north and south faces. Some of this water appeared to meltwater draining into the pit from the base

of the frost layer (about 6 in. BGS). This pit was quickly backfilled to prevent the collection (and subsequent displacement) of contaminated water.

#### 7-8 February 1991

On 7-8 February 1991 several test pits and trenches were dug at Block 754. Test pits TP-1, TP-2, TP-3, TP-4 and TP-5 were completed along the east (downgradient) side of a concrete slab that held the plastics processing building, according to the old fire insurance map. A sixth pit was completed to construct a prepacked well (PP-2). Soil samples from each of the five pits were collected for VOC analyses; the soil in TP-2 was tested for base neutrals.

Groundwater was encountered in all pits. At TP-3 a broken pipe filled with water was quickly emptied. The water had a slight sheen; a sample of the liquid in the pit was collected for VOC analysis. At TP-5 another broken pipe yielded oily water that flooded the pit. This water was also sampled for VOC analysis.

Test pits TP-6, TP-7-1, TP-7-2, and TP-8 were dug along Greenbush Road to determine whether oil might be crossing under Greenbush Road from Block 754 to MW-18. Test pits TP-6, TP-7-2, and TP-8 did not exhibit any oil contamination. Groundwater was encountered in all pits. Although a sheen was observed in TP-7-1, the signs of oil in this test pit do not explain the levels of contamination found in samples drawn from MW-18.

TP-8 was completed as a south-to-north trench along the east edge of a concrete foundation slab shown on the 1968 map as a maintenance area. At the north end of the trench, a broken pipe originated out of the south face of the concrete foundation wall. The water that flooded the pit was sampled for VOC analysis.

TP-9 was completed as a west-to-east trench along the subsurface trench that had been accessed on 18 January. The objective was to study the alignment of this structure to gain insight into the possible influence on groundwater and oil migration. From the January access point, the tunnel was followed for approximately 100 ft before it disappeared beneath a large concreted area. The tunnel was largely filled with rubble. At one point (Plate 1 of the

Summary Report) the trench flooded and a water sample was collected for VOC analysis. Soil saturated with oil was discovered during the exploration of the area southwest of the concrete between MW-22 and B-11. This was near the location of the 18 January test pit that revealed the oil contamination. At that point the digging was stopped. Water samples were collected into single 40-ml vials; soil samples 250g jars.

#### **20 February 1991**

On 20 February 1991 six test pits (TP-A, TP-B, TP-C, TP-D1, TP-D2, and TP-E) were advanced on Block 756, the Bergstol property, near MW-18. Water samples were collected from each pit for VOC analysis. Soil samples were also collected from TP-A and TP-B for VOC analysis. A prepacked well (PP-1) was installed in a seventh pit. The objective of this activity was to investigate the extent of oil in the subsurface and determine how subsurface structures might be affecting the migration of the oil and VOCs.

During the course of digging it became clear that MW-18 had been constructed close to a subsurface foundation wall. A pipe (broken at TP-B) parallels this subsurface wall and aligns (east-west) almost directly with MW-18. The pipe had been laid in a permeable gravel bedding, now oil saturated. A sample of water draining from the pipe was collected for VOC analysis.

Water samples were collected into single 40 ml vials; soil samples, 250g jars.

				lint					Date <u>08 Feb.91</u>
Pro	ject	No.	_53	35-005	5				Total Depth <u>8 feet</u>
Cli	ent	Ber	rbor	Real(	ty				Hole Diameter <u>75 in.</u>
Loc	atio	n _C	Orang	eburo	L NY	<u>'.                                    </u>			Ground Surface Elevation <u>feet</u>
Geo	logi	st _	Tari	k Zar	rouk				Depth to Water <u>4 feet</u>
DEPTH			BORIN	G INF	ORMAT	ION		GRAPHIC	
IN FEET	В		n Sampl		]	2011		SYMBOL	LITHOLOGIC DESCRIPTION
	نې	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
<u></u> -0	-	ф	얶	8	8	E	22	V TC	2
-2				<b>A</b>		OVA	0		Gray top soil material , fine sand, some clay. little organic material , woods leaves (dry).  Thin layer of green gravel on the top of black coal tar layer extent to 4 ft deep (moist).
-4			,	S.S.		OVA	0	V SS	Native material of red—brown silty sand . Composite soil sample was collected at 2—6 ft depth. (13217). Groundwater accumulated to 4 ft below surface and filled 50% of the hole after 5 hours (wet)
-6				<b>\</b>		DVA	0		
-8 -								252 252 252 252 252	Lawler, Matusky & Skelly Engineers

Pro	ject	Name	<u> </u>	lintk	cote				Date <u>08 Feb.91</u>
Pro	ject	No.	_53	35-005	5				Total Depth <u>8 feet</u>
1									
1									
i									
DEPTH IN FEET	-			G INF	ORMATI 1	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	1000	lows on		7	5	نیا	D)		
L ₀	<u>9</u>	6-12°	12-18"	18-24"	Recovery	Instrmt	Reading		•
_ 2				<b>^</b>		OVA	0	20000000000000000000000000000000000000	Gray top soil material , fine sand, some clay. little organic material , woods, leaves roots (dry).  Red- brown silty fine sand, some clay, little gravel extent to 8 ft deep (moist to wet).
								55.55 57.55 57.55 57.55 57.55 57.55 57.55 57.55 57.55 57.55	A composite soil sample was collected at depth of 2–6 ft. (18553). Water entered the pit from the east side and had a sheen .
-4				5.5		OVA	0		
-6				•		OVA	0		Lawler, Matusky & Skelly Engineers
-8									

Pro	oject	Name	9 F	lint	kote				Date <u>08 Feb.91</u>
	oject								
1	-								
1									
Geo	ologis	st _	ları	k Zar	rouk				Depth to Water <u>6 feet</u>
DEPTH			BORIN	G INF	ORMAT	ION		GRAPHIC	LITHOLOGIC DESCRIPTION
IN FEET	B	lows or	Sampl	er				SYMBOL	ETHOLOGIC DESCRIPTION
-0	<u>.9-0</u>	6-12"	12-18"	18-24"	Recovery	Instriit.	Reading		
								O O TS	This test pit has the same stratigraphy as hole $\#$ TP-2 which is 50 ft to the south.
								000	Gray top soil, some silty sand, little clay , trace of construction debris ( dry) .
								000	
								000	
-2						OVA	0	0 0	
					7			ਕੁਕੂਰ sS ਕੁਕੂਰ	Red— brown fill material, silty fine sand , little clay
								27.27 27.27	water sample (16124) and soil sample (13218) were collected at 6–8 depth. The water flow direction
								27.27.E	reflected the direction of a broken north- south
								222 222	pipe line (hit north—south running 6 in. Orangebuge pipe the east side of the hole and after a period of time
								25. 25.	the pipe stopped draining. The water had a little sheen on the surface.
								<u> </u>	
							0	222 222	
-4						OVA	0	<u> </u>	i
			l					<u> </u>	
								222	
								<u> </u>	
								<u> </u>	
								27.27 27.27	
-6		<b>A</b>				OVA	0	$\nabla$	
				T				- - 	
		Ш	1					<u> </u>	
			,	1					
	5	5.S		N.S					
								222	
								222	
_		₩		*				222 222	Lawler, Matusky & Skelly Engineers
-8							$\dashv$	<u> </u>	-

					a		1,500		
1									
1									
Cli	ent	<u>Ber</u>	bor f	Realt	Υ				Hole Diameter <u>75 in.</u>
Loc	ation	1_0	range	eburo	L NY				Ground Surface Elevation <u>feet</u>
Geo	logis	st _	Tarik	k Zan	rouk				Depth to Water <u>7 feet</u>
DEPTH IN FEET		Ε	BORING	3 INF	DRMAT	ION		GRAPHIC	LITHOLOGIC DESCRIPTION
IN FEET	81	ows on	Sample		\ \hat{\chi}		_	SYMBOL	
-0	.9-0	6-12"	12-18"	18-24"	Recovery	Instrat	Reading		
_2						OVA	0	C C C C C C C C C C C C C C C C C C C	Gray top soil material , fine sand, some clay. little organic material , woods leaves mixed with construction debris (dry).  A layer of black fine sand mixed with ash and coal tar (moist).
-4				S S		DVA	0	55 55 55 55 55 55 55 55 55 55 55 55 55	Brown— red fine sand , some silt ,little clay (wet).  A composite soil sample was collected at 4—8 ft depth (16500). Water accumulated at 7 ft depth with sheen on the surface.
-6				<b> </b>		OVA	0		Lawler, Matusky & Skelly Engineers

Project No. 535-005  Client Berbor Realty Location Orangeburg, NY.  Geologist Tarik Zarrouk  DEPTH Blows on Sampler  GRAPHIC SYMBOL  Consider the project No. 535-005  GRAPHIC SYMBOL  Consider the project No. 535-005  GRAPHIC SYMBOL  Consider the project No. 535-005  GRAPHIC SYMBOL  LITHOLOGIC DESCRIPTION  The hole location is 10 ft north of hole # TP-4 Mixed of top soil with black sandy coal tar material and black ash , cinder (dry).	Pro	piect	Name	F:	lintk	ote				Date <u>08 Feb.91</u>
Client Berbor Realty Location Orangeburg, NY, Geologist Tarik Zarrouk  DEPTH BORING INFORMATION IN FEET Blows on Sampler  OVA  OVA  OVA  OVA  OVA  OVA  OVA  OV						_				
Composition		_								
Depth to Water 3 feet    Depth to Water 3 feet   Depth to Water 3 feet										
DEPTH BORING INFORMATION SYMBOL LITHOLOGIC DESCRIPTION    South   Sout	1									
IN FEET Bloss or Sampler  SYMBOL  LITHOLOGIC DESCRIPTION  SYMBOL  LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  SYMBOL  LITHOLOGIC DESCRIPTION  The hole location is 10 ft north of hole # TP-4  Mixed of top soil with black sandy coal tar material and black ash , cinder (dry).  O O O O O O O O O O O O O O O O O O O		Togis		31 TV	<u> </u>	TOUR			T	Depth to Water <u>3 feet</u>
DVA 0    Since   September   S						DRMAT	ION			LITHOLOGIC DESCRIPTION
The hole location is 10 ft north of hole # TP-4 Mixed of top soil with black sandy coal tar material and black ash . cinder (dry).  OVA 0  CT  A layer of black coal tar mixed with ash and green fine sand (wet).  The water accumulated west of a foundation side wall, with oil on the surface as a result of hitting 6 in. (Orangeburg) pipe at 4 ft. running north-south.  A water sample was collected at 3 ft depth (16112), also a composite soil sample was collected at 2-4 ft depth (16555).		Blo		1		ح ا	T :	I 60	31 MDUL	
Mixed of top soil with black sandy coal tar material and black ash , cinder (dry).  ONA  ONA  ONA  ONA  ONA  ONA  ONA  ON	<b>-</b> 0	. <del>9</del> 0	6-12.	12-18	18-24"	Recover	Instrint	Reading	N. I	- source of the state of the st
Lawler, Matusky & Skelly Engineers	2		w.			•		0		A layer of black coal tar mixed with ash and green fine sand (wet).  The water accumulated west of a foundation side wall, with oil on the surface as a result of hitting 6 in. (Orangeburg) pipe at 4 ft. running north—south.  A water sample was collected at 3 ft depth (16112), also a composite soil sample was collected at 2-4 ft

Pro	ject	Name	· _F	lintk	ote				Date <u>08 Feb.91</u>
Pro	ject	No.	_53	5-005	5				Total Depth <u>6 feet</u>
1									
i									
1									
				-					
DEPTH IN FEET				G INFO	ORMAT)	ON		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
		lows on	1	1	Ĵ.	ند	<b>D</b>		
	9-0	6-12"	12-18"	18-24"	Recovery	Instrut.	Reading		
<u></u> ⊢0					-	I		o d TS	The test pit located 10 ft north east of well # 8—6
								000	Gray top soil , mixed with brown fine sand ,some silt
								1 104 1	little clay , trace of coal tar (dry) .
								000	
								000	
								0.0	
								0.0	
_						OVA	0	0	
-2								ਕੁਕੜੇ sS ਕੁਕੜੇ	Cod board (13) and a local and
								222	Red— brown fill material, interbedded of silty clay and f—m sand layers.
								222 222	Ground water in the coarser grain size layers. The water has sheen on the suface and entered the
								222 222	pit from the west side. A composite soil sample was collected at 2—6 ft depth
								<u>222</u> 2	(18554) , also water sample was collected from the hole at 5 ft depth (16121).
								27.27 27.27	at 3 ft depth (16121).
								27.27.5 27.27.5	
		A							
				,					
				5.5				222	
-4						OVA	0	<u> </u>	-
		1		Ш				27.27.2 27.27.2	1
		$\omega_{5}$		Ш					
				Ш					
								<b>弄</b> 屋	
								<u> </u>	
		•		V				<u> </u>	
								222 222	
								222 222	Lawler, Matusky & Skelly Engineers
-6							$\dashv$	SEI	-

				-2					
1								-	
Loc	atio	u _C	<u>)rang</u>	eburc	J. NY	<u>′.                                    </u>			Ground Surface Elevation <u>feet</u>
Geo	ologi	st _	Tari	k Zar	rrouk				Depth to Water <u>6.75 feet</u>
DEPTH		-	BORIN	IG INF	ORMAT	ION		GRAPHIC	
IN FEET	В	Blows on						SYMBOL	LITHOLOGIC DESCRIPTION
-O	:9-0	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
-2								СТ	Fill material, mixed of coal tar and ashes ,little gravel,organic material , woods, leaves roots (dry).
-4					\$. <b>\$</b>	OVA	0	STATE SS STATE SS STATE STATE	Interbedded brown yellow m-f sand and v.f. brown red silty sand (moist to wet).  Water in the m. sand layers with some sheen on the surface.  A composite soil sample was collected at 3–6 ft depth (18552). The hole is located 19 ft east of BP-9.
-6					•				
-8 -									Lawler, Matusky & Skelly Engineers

Pro	oject	Name	9 _F	lint	kote				Date <u>08 Feb.91</u>
1									
1									
1									
	710g1	JC _	101 2	IX CUI	T OUN			T	Depth to Water <u>5 feet</u>
DEPTH IN FEET				G INF	ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	В	lows or	1	1	7	Li	I o	STRIBUL	
	<u>.</u> 9-0	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
<u></u>					-	H	-	o d TS	The test pit located 19 ft south west of well # B-12
								TS	Gray top soil , mixed with brown fine sand ,some silt little clay , foundation debris (dry) .
-2						OVA	0		
								55 55 55 55 55 55 55 55 55 55 55 55 55	Red— brown fill material, interbedded silty clay and yellow m—f sand layers. Ground water in the coarser grain size layers. The water was clean and sample was collected at 5 ft depth, (16123).
-4								25 25 5 25 25	-
			d	W.S				2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
-6 -				<b>V</b>				555 555 555 555 555	Lawler, Matusky & Skelly Engineers

Pro	piect	Name	p F	lintk	ote					Data 07 Feb 04
1										
1										
Ged	1091	st ₋	ranı	k Zar	rouk					Depth to Water <u>2 feet</u>
DEPTH IN FEET			BORIN	G INFO	DRMAT	ION		GRAPHI		LITHOLOGIC DESCRIPTION
IN FEET	В	lows on	Sampl	7	>	<del></del>		SYMBO	_	
-0	. <u>9</u>	6-12 _'	12-18"	18-24"	Recovery	Instruct	Reading	-		
_0				W.S	4	OVA	0		sS PL	A trench was dug to relocate the passway of old tunnel 11 ft north of well # B12. 6 inchs concrete slab covers the surface (dry).  Gray fine sand , some silt ,little clay.  Broken 6 in. (Orangeburg) pipe at 1.5 ft depth running west-east and water sample was collected from this pipe for analysis after noticing sheen on the water surface (18551). Pipe originates from foundation wall (Maintenance bldg ? ) in alcove with foundation to north.  Gray fine sand, some silt, little clay.
								2022 2022 2022 2022 2022 2022		
-4					î.			57.57 1 57.57 2 57.57 1 57.57 1		Lawler, Matusky & Skelly Engineers -

Pro	oject	. Name	e _F	lint	kote				Date <u>07 Feb.91</u>
Pro	oject	No.	_53	<u>35-00</u> !	5				Total Depth <u>4 feet</u>
Cli	ient	_Ber	rodr	Realf	ty				
Loc	catio	u T	<u>)rano</u>	<u>rebur</u> c	J. NY	<u> </u>			Ground Surface Elevation <u>feet</u>
Geo	ologi	st .	Tari	k Zar	rouk				_ Depth to Water <u>2 feet</u>
DEPTH IN FEET	8	lows on		NG INF	ORMAT	ION		GRAPHIC SYMBOL	LITHOLOGIC DESCRIPTION
	. <del>9</del> -0	T	12-18"	18-24"	Recovery	堇	Reading		
L ₀	-6	6-12"	걲	南	<u>8</u>	Instrik.	Fear	D000	
								xxxx ct xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxxx	A trench was dug to relocate the passway of old tunnel running west —east . 6 in.concrete slab on surface (dry) .
								△ cf	The old tunnel was filled with construction fill material and foundation debris.
-2						OVA	0		Water sample was collected at 2 ft below the surface from the middle of the tunnel where water entered the pit from the south side (16116).
-4 -				w·s					Lawler, Matusky & Skelly Engineers

Pro	oiect	Nam	e F	lint	kote				Date <u>20 Feb.91</u>
i	oject				_				
1									
Geo	ologis	t.	Tari	k Zar	rrouk				Depth to Water <u>6 feet</u>
DEPTH			BORIN	G INF	ORMAT	ION		GRAPHIC	177101 0070 070070
IN FEET	810	ous or	Sampl	er				SYMBOL	LITHOLOGIC DESCRIPTION
	.9-0	6-12°	12-18"	18-24"	Recovery	Instrint.	Reading		
-0	°	-ф	벍	#	EG.	Inst	<u>8</u>	N.:	
-2						OVA	0		Dark brown—red silty sand mixed with gray top soil sandy silt and little construction debris (dry).  Red— brown silty fine sand, some clay, little gravel
-4	s	7.5		₩.5		OVA	0	GS	Gray green silty fine sand with some oil odor (wet). Soil sample was collected at 4—6 ft depth, (A16498).
-8								SS   SS   SS   SS   SS   SS   SS   SS	Brown silty sand, some clay extent to 8 ft.  Water accumulated in the hole at 5 ft depth, where most of the water seeping into the hole is originating from a 3 ft deep zone on south side of the pit. water sample was collected after noticing sheen on the surface. (A16119).  Lawler, Matusky & Skelly Engineers
							$\neg$		1

Pro	ject N	ame _	Flint	kote				Date <u>20 Feb.91</u>
Pro	ject N	o. <u>5</u>	35-00	5				Total Depth <u>4 feet</u>
Cli	ent _	Berbor	Real	ty				Hole Diameter <u>60 in.</u>
Loc	ation	<u>Oran</u>	geburo	J. NY	<u>′.                                    </u>			Ground Surface Elevation <u>feet</u>
Geo	logist	Tar	ik Zar	rouk				Depth to Water <u>2 feet</u>
DEPTH		BORI	NG INF	ORMAT	ION		GRAPHIC	
IN FEET	Blow	s on Samp					SYMBOL	LITHOLOGIC DESCRIPTION
	<u>.</u> 9-0	5-12.	18-24"	Recovery	Instruct.	Reading		
-0		P 5	8	8	ig.	ä	V TC	Constant and the second
2	tu			5.\$	OVA	0	DO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Gray top soil mixed with red silty sand, some construction debris (dry).  Hit brooken 6 in. pipe where water mixed with free product drained from the pipe and started to fill the hole.  A layer of green gravel around the pipe line was saturated with oil.  Soil sample was collected at 2-4 ft depth. (A16499).  Also water sample was collected from the pipe which is running west -east (A16113).
							SS SS SS SS SS SS SS SS SS SS SS SS SS	Red-brown silty sand ,some green gravel, little clay.  Next to the south of the pit a subsurface wall running at the same direction of the pipe line.  Wall depth is below bottom of test pit.
-4							22.22 22.22 22.22 22.22	Lawler, Matusky & Skelly Engineers -

Pro	oject	Name	e <u>F</u>	lint	kote				Date <u>20 Feb.91</u>
4									
1									
Ged	1091	st _	ranı	k Zar	'L'OUK				Depth to Water <u>3 feet</u>
DEPTH IN FEET			BORIN	IG INF	ORMAT	ION		GRAPHIC	LITHOLOGIC DESCRIPTION
IN FEET	B	lows on	Sampl	1	_	<del></del>		SYMBOL	
	<u>.</u>	6-12°	12-18	18-24"	Recovery	Instruct.	Reading		
-0	-			=	<u> 8</u>	Ë	<u> </u>	TS TS	Pank may ton coil of fine and come sill and
-2						OVA	0	E E E E E E E E E E E E E E E E E E E	Coal tar layer interbedded with fine sand and silt Water in the sand layers. Water sample was collected at 3 ft depth (A16111)—wet. Water had no apparent oil odor or contamination.
-4 -				<b>↑</b> <i>ω-s</i> <b>↓</b>					Lawler, Matusky & Skelly Engineers

Pro	ject	Name	<u>.</u> F	lintk	cote				Date <u>20 Feb.91</u>
Pro	ject	No.	_53	<u>5-005</u>	5				Total Depth _4 feet
Cli	ent	_Ber	bor I	Realt	<u>.</u> Y				Hole Diameter <u>75 in.</u>
Loc	ation	1 <u>C</u>	range	eburc	r NA	<u>′.                                    </u>			Ground Surface Elevation <u>feet</u>
Geo	ologis	st _	Taril	k Zar	<u>'rouk</u>				Depth to Water <u>2 feet</u>
DEPTH IN FEET						ION		10000000000000000000000000000000000000	LITHOLOGIC DESCRIPTION
	. <del>9-</del> 0	6-12"	12-18"	18-24"	Recovery	Instruct.	Reading		
<b>⊢</b> 0			-	=	æ	Ĕ	- a	o d TS	Dark gray top soil of fine sand , some silt and
2						OVA	0		clay, little construction debris (dry).
-4			₩·S ₩·S					CT	Coal tar layer interbedded with fine sand and silt The water was captured in the sand layer. Also a broken 6 in. pipe at 2 ft depth where water had little sheen on the surface and water sample was collected. (A16122) The location of D1 is 16 ft south of D2 .  Thick layer of coal tar at the bottom of the pit some silty sand and parts of cables, wires.  Lawler, Matusky & Skelly Engineers

Des	inak	Name		1:04	(D. b. c.				
1									
Cli	ent	_Ber	bor	Realt	ty_				Hole Diameter <u>75 in.</u>
Loc	ation	_0	rang	eburo	NY NY	•			Ground Surface Elevation <u>feet</u>
Geo	Geologist <u>Tarik Zarrouk</u>								Depth to Water <u>3 feet</u>
DEPTH		В	ORIN	3 INF	ORMAT	TON		GRAPHIC	
IN FEET	810	OKS ON			]	2011		SYMBOL	LITHOLOGIC DESCRIPTION
	.9	6-12"	12-18"	18-24"	Recovery	Instruk.	Reading		
-0	9	ф	걲	萄	8	Inst	Fear	V 1 ==	
2						OVA	0	$\frac{\partial_{0} \circ \circ$	Dark gray top soil of fine sand , some silt and clay, little construction debris (dry).
-4			<b>↑</b> w.₅					CT	Coal tar layer interbedded with fine sand and silt Water in the sand layers. Water sample was collected at 2.5 ft depth (wet). Water had little sheen on the surface, (A16114).  **Lawler, Matusky & Skelly Engineers**

Pro	oject	Name	<u> </u>	lintk	ote				Date <u>08 Feb.91</u>
Pro	ject	No.	_53	5-005	5				Total Depth <u>8 feet</u>
Cli	ient	Ber	bor	Realt	:y				
Loc	atio	n _0	rang	eburc	L NY				
Geo	ologis	st _	Taril	k Zan	rouk				
DEPTH IN FEET	I DOUTING THE CONTRACT OF A STATE OF THE STA				ION			LITHOLOGIC DESCRIPTION	
-	Sept. Letter	I			rg G	ig i	5,		
L -0	.9-0	6-12"	12-18"	18-24"	Recovery	Instruct	Reading		
_ Q						OVA	0		Gray top soil material , fine sand, some clay. little organic material , woods, leaves roots (dry).
							0	SS SS SS SS SS SS SS SS SS SS SS SS SS	Red— brown silty fine sand, some clay, little gravel extent to 8 ft deep (moist to wet).  Water entered the pit from the east side and had a sheen on the surface . Chemical odor present.
-4						OVA	0		-
-6						OVA	0		
-8 -						_ ا		<u>2527</u>	Lawler, Matusky & Skelly Engineers -

APPENDIX G
WELL DEVELOPMENT

APPENDIX G WELL DEVELOPMENT SUMMARY

			Purge	Amount	
Well	Date	Pump	(gal)	Well Volumes	Final Turbidity (NTU)
MW-18	2/5/91	С	62	47	15
MW-20	2/5/91	C	65	40	11
MW-22	11/21/90 2/5/91	C P	28 17	22 9	40 5
B-6	11/26/90 2/5/91	C P	84 6	139 18	8 6.5
B-9	11/26/90	P	15	44	16
B-11	2/5/91	P	23	36	7.5
B-14	11/21/90 11/26/90	C,B P	1 12	1 15	No reading 7
B-17	11/21/90	С	23	47	32
B-18	11/26/90	С	27	43	17
B-20	11/20/90 11/26/90	C P	16 7	27 12	80 0.7
PP-1	2/25/91	P	13	18	3.2
PP-2	2/25/91	P	24	26	20

C = Centrifugal pump P = Peristaltic pump B = Bailer

LAWLER,	MATUSKY	&	SKELLY	ENGINEERS
	CREW CH	441	DEDOD	r

	LAWLER, MATUSKY & SKE CREW CHIEF RE		PAGEOF
٠.	CREW CHIEF: D.K. FC CREW MEMBER(S): JMCK, BL CLIENT: BPRGSTO SURVEY: WPII DEVELOPMENT	5. JOB NO: 6. PROJ. MGR: 7. VEHICLE US 8. BOAT(S) US	ED:
В.	CREW CHIEF REPORT (COMPLETE AFTER SU  1. SURVEY START/END DATE  2. SURVEY START/END TIME  3. DESCRIBE DETAILS IN SECTION C:  (a) SAMPLING GEAR WORKING PROPERLY (b) METERS FIELD CALIBRATED: (1)WA  (2)AI  (FIELD CALIB.MUST BE ATTACHED TO C  (c) WAS DOWNTIME INCURRED? #HRS? (d) ANY INCIDENTS, ACCIDENTS, PERT  4. WERE FOLLOWING REPORTS COMPLETED (a) WEATHER CONDITIONS LISTED ON F (b) RADIO LOGS (c) EQUIPMENT USAGE (d) BOAT/VEHICLE LOGS  5. BOAT USAGE (a) ENGINE HOURS (b) RADIO LOGS (c) BOAT LOCATION  6. CHAIN OF CUSTODY COMPLETED. SAMPL  COMMENTS/OBSERVATIONS  SURVEY WENT SOW WE  DEVELOPED MOST WELL  DEVELOPED MOST WELL  ATT	TER QUALITY R MONITOR (HNU, OVA, CG RIG. C.C. REPORT & S INENT OBSER. & SUBMITTED? IELD DATA SHEETS  ES SIGNED OVER.	TOTOY\N
- ^TE: - ✓	SEND ORIGINAL CREW CHIEF REPORT TO SEND YELLOW COPY TO WAREHOUSE. RE		

USE ADDITIONAL SHEET(S), IF NECESSARY.

Crew: 1/26-21-26

Job No: 535-005

#### LAWLER, MATUSKY & SKELLY ENGINEERS FIELD METER CALIBRATION AND/OR CHECK DATA SHEET

Site: BERGSTOL Oper: Well Devel Calib. By:

METER NO./ PROBE No.	TIME	THERM TEMP.	No./ (°C)	EXPE VAL	CTED UE		LUE	%   DIFF.*	COMMENTS
LM) 001	1555		<u>.</u>	100	10/1	90/10	10/1		
TURB.									
11/20			ļ .						
LMS 601	0940			100	10/1	90/100	10/1	_	
11/21		-			1		1		
	• •						1		
	. ~.				1				
cms, och	1000		·	100	10/1	90/100	10/,		
11/26			1		-		l .	¢.	
1104				مريش راج			·		
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^{*}Include % Diff. calculation for conductivity calibration checks: % Diff =  $\frac{Ex - Ob}{Ex}$  X 100 For dissolved oxygen and pH meter calibrations, record adjustments in comment section.

DATE	11/20/90	<u>5</u>		WELL NO. BY-	0
CREW	DK. TM	CH		pH No.	
JOB	No. 535-001	<u></u>	THERM	MOMETER No.	1
SITE N	NAME RORGST	0		SCT No.	
DEVEL. ME	THOD		TUR	RBIDITY NO. LMJ	-001
TIME	GALLONS BAILED	рН	Temperature (°C)	SPECIFIC CONDUCTANCE (**mhos/cm)	TURBIDIT
1530	2.62	Carried States	- Contract of the Contract of		WENT
1556	5 GAL				WEKT
1610	1 COAL				
1625	5 GAL				400
1630	8 GAL		3		100
1637	11 GAL				100
1640	16 COAL	V			80
	: :				Section 1
,				. 46	
	VATER: 5.08		PTH of WELL: 14		
			PTH of WELL:		
OMMENTS:_	PUC ST	ich-uf	1.60. DTh	I TAKEN AT	TOF
of puc	. WATER	DAR	K BROWN.		

	DATE	11/21/90	) -	W.	WELL No. MW-	22
	CREW	DK BL			pH No	-
	J.OB	No. 535-001	<u> </u>	THERM	OMETER No.	
1	SITE N	CENTRIFU	GAL	TUR	SCT NOBIDITY NO. L/MS-	001
	TIME	GALLONS BAILED	рН	GPM Temperature (°C)	SPECIFIC CONDUCTANCE (,4mhos/cm)	TURBIDITY (NTU'S)
ART	1236		_	1 GPM		
	1234	4 GAL				500
	1237	7 GAL.				
M	1237	DRX 8GAL				
<b>PKI</b>	1253			· 50 OPM		
	13.00					175
1	1310					70
いり	1330	20 GA45				40
		TOTAL 88 WA				
		8.				
*						
						,
		77 mmp - 6 1d Q'			3(-1)	1)/12
D	EPTH to V	VATER: 6.90)	DE	EPTH of WELL: 14. EPTH of WELL:	TIME:	340
С	OMMENTS:	STARTED	0UT:	DARK BROI	<b>✓</b> 7∀	•
				e* 40		· · · · · · · · · · · · · · · · · · ·
-	200					

DEVEL. METHOD SCE DEION  THERMOMETER NO.  SITE NAME SERVITOL  SCT NO.  TURBIDITY NO.  SPECIFIC CONDUCTANCE TURBIDITY  OS55  OS	DATE	11/21/90			WELL NO. B/9-14	1
SITE NAME 3 CROSTOL  SCI NO	CREW	DK. BL				
SITE NAME 3CACATAL  SEVEL. METHOD SC Delow  TURBIDITY NO. LANS COLUMN TURBIDITY NO. LANS COLUMN TURBIDITY NO. LANS COLUMN TURBIDITY NO. LANS COLUMN TIME  GALLONS BAILED PH Temperature CONDUCTANCE (Amhos/cm) (NTU's)  C855 75  C955 75  C956 1007 1004 1004 1000 1000 1000 1000 1000	JOB	No. 535-005		THERM	OMETER No.	,
TIME GALLONS BATLED PH Temperature CONDUCTANCE (NTU'S)  ORST 75  ORST 75  ORST 75  ORST 106  ORS	SITE N	AME BERGSTON				
TIME GALLONS BAILED pH Temperature CONDUCTANCE (Amhos/cm) TURBIDITY (NTU'S)  ORSS 5 .75  ORSS 7 .75  O	DEVEL. ME	THOD *See be	low	TUR		00/
0955 0905 0905 0905 1007 1	TIME		рH		CONDUCTANCE	
0905 10AL NOREADING 1010 1 GAL NOREADING 1020 1 GAL 1044 1GAL 1044 1GAL 1044 1GAL 1045 1 GAL 1047 1GAL 1048 1 GAL 1049 1 GAL 1050 1		.75				
1016   1 GAL	0905	, ,50				
		1 GAL				NO READING
PTH to WATER: 9.58 DEPTH of WELL: 16/2 TIME: 0550 PTH to WATER: DEPTH of WELL: TIME: WATER: PVC STKK-VP- 1.59 WENT DRY .75 GAL	020.	1 GAL		:		
PTH to WATER: 9.58 DEPTH of WELL: 16/2 TIME: 0850  PTH to WATER: DEPTH of WELL: TIME: WATER: PYC STKK-UP- 1.59 WENT DRY .75 GAL-  MMENTS: PYC STKK-UP- 1.59 WENT DRY .75 GAL-  MAND SURGED .50 GAL AT 0905 SION.	1042	16AL				
PTH to WATER: 7.58 DEPTH of WELL: 16-12 TIME: 03-50 PTH to WATER: DEPTH of WELL: TIME: TIME: MMENTS: PVC STKK-VP- 1.59 WENT DRY .75 GAL  MENTS: PVC STKK-VP- 1.59 WENT DRY .75 GAL  MAND SURGED .50 GAL AT 0905 SION.		1 GAL	•			1
PTH to WATER: DEPTH OF WELL: TIME: TIME: MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW			•			
PTH to WATER: DEPTH OF WELL: TIME: TIME: MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
PTH to WATER: DEPTH OF WELL: TIME: TIME: MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
PTH to WATER: DEPTH OF WELL: TIME: TIME: MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
MMENTS: PVC STICK-UP- 1.59 WENT DRY .75 GAL  SSS HAND SURGED .50 GAL AT 0905 SION						
MMENTS: PVC STICK-UP- 1.59 WENT DRY .75 GAL  S55 HAND SURGED .50 GAL AT 0905 SION						
PTH to WATER: DEPTH OF WELL: TIME: TIME: MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
MMENTS: PVC STICK-UP- 1.59 WENT DRY .75 GAL  SSS HAND SURGED .50 GAL AT 0905 SION						
PTH to WATER: DEPTH of WELL: TIME: TIME: MMENTS: PYC STKK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
PTH to WATER: DEPTH of WELL: TIME: TIME: MMENTS: PYC STKK-UP- 1.59 WENT DRY .75 GAL 355 HAND SURGED .50 GAL AT 0905 SIOW						
MMENTS: PYC STICK-UP- 1.59 WENT DRY .75 GAL 7						0850
155 HAND SURGED .50 GAL AT 0905 SIOW O	PTH to W	ATER:	_ DE	PTH of WELL:	TIME:	لبعد
155 HAND SURGED .50 GAL AT 0905 SIOW O	MMENTS:_	tyc stick	-41-	1.59 WENT	DRY .75	GAL
	855	HAND SU	RUED	·50 GAL	AT 0905 SI	,0 m

			DHVHIOTTHIN HOG		
DATE	11/21/90	<u> </u>		WELL NO. B/F-	7
CREW				pH No.	
JOB	No. 535-001	<u>)</u>	THERM	OMETER No	•
SITE N	AME BERGSTO	1		SCT No.	
EVEL. ME	THOD CPNTR	-	TUR	BIDITY No. LMS-	00)
TIME	GALLONS BAILED	рH	Temperature (°C)	SPECIFIC CONDUCTANCE (/*mhos/cm)	TURBIDI
0945	1 GAL	_			- DRX
1012	2 GAL				
1026			:50 GPM		200
1025	2 GAL				READIN
1041			125 OPM		
1054					350
959					175
1202					300
1117					125
1422					75
1129					55
1150					53
1155	18 GALS				32
	TOTAL 23				
,A.,					
				the state of the s	AND THE RESERVE
	VATER: 7.77	DI	EPTH of WELL: 15.		
EPTH to V	VATER: 7.901		EPTH of WELL:	TIME: 12	. 65
OMMENTS:_	DARKBR	owk:			
			•		

DATE	11/26/90	<u> </u>			WELL NO. BIP-	18
CREW	DK, ec		pH No			
JOB	No. 535-065	yaon j		THERM	OMETER No.	
SITE N	AME BERGST	-CL			SCT No.	,
DEVEL. ME	THOD CENTRIF	1646 8	50/79	TUR	BIDITY NO. LMS.	-00/
TIME	GALLONS BAILED	рH	Temperati	ure	SPECIFIC CONDUCTANCE (/*mhos/cm)	TURBIDITY (NTU'S)
1240	3 6AL		1.69M			
1752			.50.09	M		
1259.	3 GAL			,	9	: .
1310.			-25 60	FM		
1318	2 GAL					200
1329	3.GAL					
1339						
1354	3.5		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
1404			7.25			
1420			-			280.
1428						175
1442						125 .
145%	7.5					100
1506				•	•	
1520		·				90
1535			1			90.
	VATER: 5.541		PTH of WELL			
	ATER: 8.90'				TIME:	
COMMENTS:_	ruc stick	(-UF-)	4.80 · V	VATE:	R. DARK BR	OWA

	DATE	11/26/90	)		WELL NO. B/F	- 18
	CREW	0		·	pH No	
	JOB	· · · · · ·		murpw		
	•	Dance		IAERM	OMETER No.	
	SITE N. DEVEL. ME			TUR	SCT NO	001
	TIME	GALLONS BAILED	рН	GPM Temperature (°C)	SPECIFIC CONDUCTANCE (/*mhos/cm)	TURBIDITY (NTU'S)
	1540			7.25		95
	1548			·		75
	けちょ					51
	1555	·				40
	1557					28
D	1559	6 GAL				17
		TOTAL 27AL	8			
-			·			
		· · · · · · · · · · · · · · · · · · ·				
			*	•		
	•.	•				
				j.		
D	EPTH to W	ATER:	DE	PTH of WELL:	TIME:	
D	DEPTH to WATER: DEPTH of WELL: TIME:					
С	OMMENTS:_			· · · · · · · · · · · · · · · · · · ·		
	-		8			

DATE 10/26/90 WELL NO. 8/9-90						2
CREW DK, EC ph No.						
JOB No. 535-005 THERMOMETER NO.						
7	SITE N	AME BERIOSTOL	_		SCT No.	
1	DEVEL. ME	THOD CENTRIF	UGAI 1	TUR	BIDITY NO. LM5-	00)
	TIME	GALLONS BAILED	рН	Temperature	SPECIFIC CONDUCTANCE (Amhos/cm)	TURBIDITY (NTU'S)
PRT	1000	start thing	la.	OFM		
	1029	9 COAL				500
	1045	25 Gal	÷			275
•	1055					550
	1108	46,9al				140
* /:   Z.e-	1113				Samo sample as @ 1108 - letair out.	125
	1120	57 Gal				
1	(130)	64 GAL				125
	1134	69 GAL				80
	1140	74 GAL				48.
,11)	1150	84 GA				8
			. ***			
į						
E.						
				3025		
		VATER: 5		EPTH of WELL: 145		0945
		VATER: 7.90		EPTH of WELL:		
				1.50. WAT	PR. STARTE	200年
	+1 1) $t$	ARK BROW	IN			, ·

## WELL DEVELOPMENT LOG

DATE	11/26/90	B/P well	- 20 No	_
CREW	DL/ELH	рН	No.	
JOB No.	535-005	THERMOMETER	No	_
SITE NAME	Benstol/FK	SCT	No	_
	The act the	MILE DEPENDE	N. 1	

DEVEL. METHOD Perstaltic

TURBIDITY No. OC

				<u> </u>	
TIME	GALLONS BAILED	рН	Comments Temperature (°C)	SPECIFIC CONDUCTANCE (~mhos/cm)	TURBIDITY (NTU'S)
1458	1		PR=4.0		i de
1500			PR=6.0 PT=2min		•
1503	1.0 Gal		PT = 2 min PT = 5:0 min mc PR = 7.0		
1509	2.3		PT= 11.0 min		73
1512	3.0 Gal		PR=8 PT= 13= 13.30 PR=8	Re-surged Flez.	25
1517	4.0 Gal		PT= 18:30 PR=8		45
1520	5.0 Gal		PT=21:45 PR=8		7.0
1525	6.0 Gal		PT = 26.0 PR = 8		1.2
1529	7.0 Gal		PT=30:45 PR:8		0.7
			•		
					<b>,</b>
					· .

DEPTH to WATER	5.14 BTC	DEPTH of	WELL: 14.35	TIME: 1445
DEPTH to WATER:	4.20 BTC	DEPTH of	WELL: 14.35	TIME: 1532
COMMENTS:		•		
•				EUA

DATE	11/26/90	_		WELL NO. B/P-69	
CREW	DK/ECH	_		pH No	
JOB I	No. 535-00	2	THERMO	DMETER No	
SITE N	AME Bergstol/	FK		SCT No	
DEVEL. ME	1/04/ /00.1	penstall	nc _{TURI}	BIDITY No.# <u>001</u>	
TIME	GALLONS BAILED	рH	Comments Temperature	SPECIFIC CONDUCTANCE (~mhos/cm)	TURBIDITY (NTU'S)
1015	Start Hand bailing		·		
1020	Near Dry Detroleunt odor/		Start penstaltre?		
1029	Sheert.		Opaque, nd/by Gw		
1035:			reset gen. spead		
1637			Start Pump speed at 1.5-2.5		
1055				**************************************	(175)
1058	2.0 Gal our		Stop pump water level at ≈ 7.5'		
() []			Wall level @ 5.0' BTC	in the second se	
14/201124	•	4	Water Renel @ 3-32'5TC		
1127			Set 8 Ltart penstabil		
1130			Pump speed at 3.0		(200)
1136	2.75		A pump speed to 3.5 pump time 13:30		opaque.
1140	3.0 Gal				
1147	3.75 Gal		pump time 21:30 Drate to 4		
1155	4.0 bal		Punt 29.0 MIN		375
EPTH to W	VATER: 3-20	DI	EPTH of WELL: 8.5.	5 TIME: _09	35
			EPTH of WELL:	TIME:	
OMMENTS:_	PVC STIC	K	1.55	EC	4

DATE			WELL NO. B/P-9				
CREW		_	pH No				
JOB	No	_	THERM	OMETER No			
SITE N	IAME	_		SCT No			
DEVEL. ME	THOD	_	TURI	BIDITY No	500		
TIME	GALLONS BAILED	рН	Comment 5 T <del>emperatu</del> re (°C)	SPECIFIC CONDUCTANCE (~mhos/cm)	TURBIDITY (NTU'S)		
1158	5.0 Gal		pump time 31 min		1.50		
1200	5.25 bal		& pump rate to				
120\$	6.0 bal			·	≈ <b>7</b> 10		
1208	6.25 bal		Re-surge w/ tubing pump time		125		
1213	7.0 Gal	· *	pump time 47:15	· · · · · · · · · · · · · · · · · · ·			
1218	27.56al		Drate to 4				
1234	≈ 8.75-8.85		PT = 68:15 A rate to 3				
1236	≈8.9		1 rate to 3		175-100		
1238	9000l		T=71:45 Stap-clearlines				
1248	9.0 GE		Start PR@ 3.0				
1252			PT= 4.0min 1.PR to 3.5				
1258	10.0 Gal		PT = 9:30				
1310	11.0 bal		Start Low-High on DR (2-5)!	· ·			
1315	11.5 Gal		Cont. to fluctuate PIZ PT=28.0 min		250150		
1317	11.8 Gol		PT = 30 min	• .	300 /75		
1324	12.0		PT=36		150		
DEPTH to W	ATER:	_ DE	PTH of WELL:	TIME:			
DEPTH to W	ATER:	_ DE	PTH of WELL:	TIME:			
COMMENTS:_	-						
-							

				0 /-	0			
DATE				WELL NO. B/P	-9			
CREW			pH No					
JOB	No		THERMO	METER No				
SITE N	AME			SCT No				
DEVEL. ME	THOD		TURE	BIDITY No	· · ·			
TIME	GALLONS BAILED	рН	Comments Temperature (°C)	SPECIFIC CONDUCTANCE (/*mhos/cm)	TURBIDITY (NTU'S)			
133 \$ 3	212.5		PT=43.0 MIN DR=2		125			
1337	12.75		Pt = 47.		85			
1340.	12.9		PT=51 ·	•	120			
1342	13.0		PT=53.		528			
1344			PT= 55		55			
1348	=13.1		PT:59	**************************************	30			
1352			PT = 63 PR = 2		22			
1358	≈13.5		PT= 69 PR = 2		24			
1405	≈ Bu 14.0		Pt = 77.0 min Pr = 2		070			
9 H	14.75		PT=61.0 MIN		25			
1410	14.9		PT = 91 PR=7		17			
1422	15.0		PT = 93 SHUT DOWN		16 .			
DEPTH to W	ATER:	DE	PTH of WELL:	TIME:				
DEPTH to W.	ATER:	DE	PTH of WELL:		,			
COMMENTS:_					118			

DATE 11/26/	96 WELL	P - 14 No
CREW DK/ECH	Hq	No.
JOB NO. 535-00	THERMOMETER	No
SITE NAME Berjstol	FIC	Νο
DEVEL. METHOD Devistal	turbidity turbidity	No. 00

			·		
TIME	GALLONS BAILED	рН	Temperature (°C)	SPECIFIC CONDUCTANCE (Amhos/cm)	TURBIDITY (NTU'S)
D 1544	1		PR=879-000 PT=0		
1546	0 5 Gal		PT = 2:0 nn PR = 9 710		
1548	1.0		PT = 4:30 PR = 10	•	OPAQUE
1553	3.0		PT = 9:30 PZ = 10		400
1601	3.0		PT = 16.0 min PR = 10		180?
1605	3.5		PT = 20, Dec 10-3) PR = 5-15, INC 10-3)	s of sathway ga	-
1608	80,40		PT = 23:30 PR = 7		OPAQUE
1610	4.8.gal	,	DEC PR to 3.0 Gun	9 dM.	
1614	5.0		PT = 30 min $PR = 4.0 \rightarrow 4.5$		375
1617	z5.25		PT=33 min PR=4.5 -> 3.0 go	ing dry	400
1619	≈ <b>900</b> 45.4		PT = 35.0 PR = 3.5		375
1621	≈ <b>5.6</b>		PT=31.0 PR=3.5		325
1623	≈ \$2\$ 5.8		PT=38.30 PR=3.5		82
1625	≈ 6.0		PT=41.0 PR=3.5 => 3.0		170
16	26.		PT = 94 PR = 3.0		70
16	26.		PT = 45 PR = 3-0		63

DEPTH to	WATER: 4.33 BTC	DEPTH	of WELL: 16.53	TIME: 1540
DEPTH to	WATER:	DEPTH	of WELL:	TIME:
COMMENTS:				SON
-	•		•	V

#### WELL DEVELOPMENT LOG

	DATE		_		WELL No. B/P-	- 14
	CREW				рн No	
	JOB	No	_	THERM	MOMETER No	
	SITE N	AME	_	•	SCT No	·
	DEVEL. ME	THOD	_	·TUF	RBIDITY No	
	TIME	GALLONS BAILED	рН	Temperature (°C)	SPECIFIC CONDUCTANCE (~mhos/cm)	TURBIDITY (NTU'S)
	1631	6.7		PT= 46 PR = 3		65
	16	6.8.		PT = 4.7 PR =		93
	16 .	6.9		PT= 48. PR = 3		100
	1634	7.0		p7 = 50 inc PR to 5.0		12.0
	1636	7.3		PT=51		140
	1637	7.6		PT=52	* * * * * * * * * * * * * * * * * * * *	175
	1638			PT=53		90
	1639			PT = 59		65
.	1640			PT = 55		57
	1642	8.0		PT -57		59
	1643	N. Carlotte		PT=58		65
	1644	8.1		PT = 59		64 .
	1645			PT=60		68
	11-47			PT=62		

DEPTH to WATER:	DEPTH	of WELL:	TIME:
DEPTH to WATER:	DEPTH	of WELL:	TIME:
COMMENTS:			
-			

PT = 89

Pt-

1647

1714

10.0 Gal

	DIC 11 /26/96  CREW DIC ECH		16	WELL No. B/P-14			
	CREW	DIC/ECH			pH No		
	JOB No		THERMOMETER No				
	SITE NAME		SCT No				
DEVE	DEVEL. METHOD			TURBIDITY No			
	mp/pei ME	GALLONS BAILED	нф	Temperature (°C)	SPECIFIC CONDUCTANCE (Amhos/cm)	TURBIDITY (NTU'S)	
101	130	11 gal		PT= 101:30 PR=2.5			
8 113	:30	11.85 gal		PT= 113:30 PR= 2.5		?>// NTU	
174	12.	12.0 gal		PT = @ 117:00 PR = Q.5		?>7.0 NA	
174	4 .	12.00+5al		Stop			
			٠,				
		·					
				•			
				•			
			-				
						5.40	
DEPTH	to W	ATER:	DE	PTH of WELL:	TIME:		
DEPTH	to W	ATER:	_ DE	PTH of WELL:	TIME:		
	Mea	sured backin	Nyaci	<u> </u>	(1742 and 1744	•	
			$\mathcal{L}$				

DATE	2/5/91	_ 3	, ĝ	WELL NO. B/P-	6	
CREW	DK DI	2		pH No.		
JOB :	No: 535-005		THERM	OMETER No.		
SITE N.	AME BERGS	TOI		SCT No.		
	THOD MASTER		JIN P TUR	BIDITY NO. LMS		
			PURGE RATE	SPECIFIC		
TIME	GALLONS BAILED	рН	Temperature	CONDUCTANCE (Amhos/cm)	TURBIDITY (NTU'S)	
0955	START		€.506PM			
1003	1601		maskrflex		89 Nu	
1011	1/2 601		set on speed. 3	:	57	
1019	2 601		surced tubing +		50	
1025	2/2 601		SARA SURRAL TIMES		11	
1032	3 601		inneased		20	
1044	4 Ga1		Speed to	3	90	
105/	5 601				15	
INSTONA	61/2 (ral		F		4,5	
mong crod	6/250		:		6.5	
1						
			•	8		
	\$1 \$4 \$			***		
	a .					
DEPTH to W.	ATER: 336'	DE	PTH of WELL: 19.1	8' TIME: 00	140	
DEPTH to WATER: 681 DEPTH of WELL: TIME: 1119						
COMMENTS: Weter cleared Relatively Quickly						
•						

# LAWLER, MATUSKY & SKELLY ENGINEERS

## WELL DEVELOPMENT LOG

DATE	2/5/91	_	\$	WELL NO. B) P-	-1)		
CREW	DK, DI	2		рн ио			
ЈОВ	No. 535-00:	5	THERM	OMETER No			
SITE N	AME BERGSTO	21		SCT No.			
DEVEL. ME	THOD MASTER	FIRX	UMF TUR	BIDITY No. 1, MS	-001		
			PURGE Rate	SPECIFIC			
TIME	GALLONS BAILED	рН	Temperature	-CONDUCTANCE -("mhos/cm)	TURBIDITY (NTU'S)		
1.134	Start		Pump stept on 7				
1139	1601		~ 149pm	. ×	290		
11.54	4 bal				190		
1207	76a1	4 * *			40		
1223	1/601				3.8		
1245	156al				20		
1300	196aL	Was divined to the second			12		
1B15/end	23/2 (ral		<b>V</b>		75		
7							
DEPTH .to, WA	the Care of the real shapes	THE STATE OF THE STATE OF	PTH of WELL: 15.8		<del>2</del> 5		
	DEPTH to WATER: 5,75 DEPTH of WELL: 16.01 TIME: 1320						
COMMENTS: Slight oil sheen / Slight dor							
Heavy s	silt on Rot	lon /5	cased tubina	FUR SOURTUIN	minups (1140)		
					-		

PIIC STICK-UP- 2 821

### LAWLER, MATUSKY & SKELLY ENGINEERS

### WELL DEVELOPMENT LOG

DATE	2/5/91	بر بر		د _. .	WELL NO. MW	-18
CREW	DK DI	)			ph No.	
JOB	No. 535-005			THERM	MOMETER No.	
SITE N	AME BERGST	0 !			SCT No	•
DEVEL. ME	THOD CPNT.	UMP		TUR	BIDITY NO. LMS.	00'
			PURC	P RATE	SPECIFIC	
TIME	GALLONS BAILED	рН	Temp	(°C)	CONDUCTANCE (Amhos/cm)	TURBIDITY (NTU'S)
1015			571	9RT 10		
1023	8			GPM		60
1035	20			SURGED TUBING		3-0
1050	35			1		30
1100	45		\ \			15
1117	62		FND			15
				ne series		
<i>p</i> 2						
the annual of the territories of the	ATER: 7.801		Carlo Carlo	WELL:	TIME:	1010
	ATER: 993		PTH of	WELL:	TIME:	107
COMMENTS:	BROWNISH	COLOR	FUE	>1 SMPI	1. CIPARED	UP .
			•.			
*						

#### APPENDIX H

#### **GROUNDWATER SAMPLING**

Prior to sampling, static water levels were measured and at least three well volumes of water were purged from each well using a centrifugal pump or peristaltic pump. The initial water sample was analyzed on-site for pH, temperature, conductivity and turbidity. (No on-site tests were conducted for the samples collected on 5 April 1991 and 9 April 1991). Occasionally turbidity measurements were made on the last water sample to quantify the impact of the sampling procedures on water clarity. Following standard LMS protocol for NYSDEC contract work, the water column in each well was allowed to recover to at least 90% of its original volume after purging before samples were collected.

Samples for volatile organic compounds were collected with double ball-check valve Teflon bailers; peristaltic pumps, and occasionally bailers, were used to collect samples for the remaining categories of chemicals as detailed in the attached field data sheets. Samples were collected from the mid-depth of the water column. Nylon rope and tubing were dedicated to each well. Bailers were chemically cleaned in the laboratory before use.

Sample containers and preservatives are summarized below:

Туре	Volume	Preservative
VOC	2-40 ml	
base neutral	11	
petroleum hydrocarbon	11	$\mathrm{H_2SO_4}$

All samples were placed in iced coolers and delivered by messenger to the analytical laboratory with chain-of-custody records. The chain-of-custody records included types of chemical analysis required, collection site, and sample identification number, and method of preservation.

On 11 December 1990 groundwater samples (VOC, base neutrals, and petroleum hydrocarbon) were collected from MW-18, MW-20, B-6, B-9, B-14, B-17, B-18, and B-20.

On 5 February 1991 a sample of floating oil in MW-18 was collected for analysis for VOCs and base neutrals. A top filling acrylic bailer was used to collect this sample.

On 12 February 1991 MW-18, MW-20, MW-22, B-6, and B-11 were resampled for VOCs A base neutral sample was also collected from MW-18. Two sets of VOC and base neutral samples were collected from MW-18, one with a peristaltic pump and Teflon tubing (silicone tubing in the pump head) and the other with a conventional Teflon bailer. The purpose was to quantify the impact of sampling methods on the groundwater sample. It was theorized that the bailer surged formation fines from the well bottom/pack into the sample, resulting in erroneously high semivolatiles concentrations in the December samples. The volatiles samples for MW-20, MW-22, B-6, and B-11 were collected with a peristaltic pump rather than with a bailer, as had been specified in the work plan; based on the special study for MW-18, this procedure did not have an adverse impact on the samples (see Chapter 3 of the Summary Report).

On 5-6 March 1991 the new prepacked wells (PP-1 and PP-2) were sampled for VOCs and base neutrals; B-6 was resampled for base neutrals only. The base neutral samples were collected with a peristaltic pump.

On 9 April 1991 a water sample was collected from B-11 for VOC analysis.

Trip and field blanks for the VOC analysis were included with the 11 December sampling. Trip blanks were prepared by CAMO Laboratories and consisted of reagent grade water in precleaned sample bottles. Field blanks were collected on-site from reagent grade water

prepared by LMS. The water was poured into a bailer from which the sample bottles were filled. A field blank was collected on 5 March for base neutrals analysis by running LMS reagent water through Teflon and silicone tubing of the peristaltic pump sampling system.

The field data sheets follow.

CREW CHIEF REPO	Y ENGINEERS PAGE OF PRT
-2. CREW CHIEF: D.K.	
CREW MEMBER(S): JFC	5. JOB NO: 535-005
CLIENT: BERGSTOI	6. PROJ. MGR:
4. SURVEY: WELL SAMPLE SURFACE WATER	7. VEHICLE USED: AVIS VAN 8. BOAT(S) USED:
	- Zolli (b) Obib:
B. CREW CHIEF REPORT (COMPLETE AFTER SURVI 1. SURVEY START/END DATE 2. SURVEY START/END TIME	EY.) (2/11/90/12/11/9 0630 / 1800
3. DESCRIBE DETAILS IN SECTION C: (a) SAMPLING GEAR WORKING PROPERLY (b) METERS FIFED CALEBRATICS	$\overline{Q}$
(b) METERS FIELD CALIBRATED: (1) WATER	
(FIELD CALIBIMUST BE ATTACHED TO ORTO	MONITOR (HNU, OVA, CGI)
( ) WIND DOWNTIME INCURRED #HDG)	
(Q) ANY INCIDENTS, ACCIDENTS DEPTING	ENT OBSER.  Y
* "EXE FOLLOWING REPORTS COMPLETED & S	CIIRMTTTTFD2
(a) WEATHER CONDITIONS LISTED ON FIFT	D DATA SHEETS
(b) RADIO LOGS	Y() (V)/)
(c) EQUIPMENT USAGE (d) BOAT/VEHICLE LOGS	(y)/i
5. BOAT USAGE	W i
(a) ENGINE HOURS	mo
(b) RADIO LOGS	TO TO
(C) BOAT LOCATION	
6. CHAIN OF CUSTODY COMPLETED. SAMPLES	SIGNED OVER.
COMMENTS/OBSERVATIONS SURVEY WENT WEIL MOST OF WITH MASTERFIEX PUMPS, MW-18	THE WPIIS WERE PURGE HAP PRODUCT IN 17.
TE: SEND ORIGINAL CREW CHIEF REPORT TO QA/Q SEND YELLOW COPY TO WAREHOUSE. RETAIN	C WITHIN 5 DAYS OF SURVEY COMPLETION PINK COPY FOR C.C. FILE.
C.C. SIGNATURE DONAID KASSELL	DATE: 12/20/90

USE ADDITIONAL SHEET(S), IF NECESSARY.

Calib. By: 0K	COMMENTS												;							
lc.	STEE DIFF.																			
NA.	ADJ TO ^A	7.0	7.0					7.0		70						1001	001			-
C?' DATA	OBSERVED VALUE	4:1.90	7	4.9 9.8					43 99	7.9	4.8 19.9					110 110	136 1:10			7
Ę.	EXPECTED	4.0116.6	<del> </del>	4.6 1106			- (		10.0	7.0	00) 0.15	-				1/01/001	1 01 00			
DR TO	1 -1	7.7	4.9	→ >			- 0	120 17.5		カ・ナ	*				-:			-		
, , , , ,	TIME	$\rightarrow$	1700	>			-	1 64/0	7	1700	->			·		0720	1700			1.
11. N	PROBE NO.				 					٠						0)	TVRB			

Or dissolved oxygen and pH meter calibrations, record adjustments (include % and ppm readings for dissolved exygen meter calibration).

nclude % Diff. calculation for conductivity calibration checks: % Diff =  $\frac{Ex - Ob}{C}$ 

X 100

	METERS USED
Date: 12/11/90	Teinp: 150
Crew: JAC DK JC E4	pH:
Job No: 335-005	Cond: 72C 10
Project: Well Samply	Turb: Lms ou)
Project Site: Feldman Bergsty	
Well ID No: MW-18	DTW Before Sampling: 8.10
Well Condition: 60 J2	! Sample Date/Time(s): 12/11/90 15/10
Well Depth/Diameter: 15.90/2"	Sampling Method: Tefila Bena
Well Casing Type: PVC	Sampling Depth(s): M. D. D. P. P. T.
Screened Interval: /0'	DTW After Sampling:
Casing Ht/Lock No: /2246	Sampling Observations: FUEL PRODU
Reference Pt: Typ of pre ()	Chain-of-Custody No(s):
Depth to Water (DTW): 7,99'; Total	Analytical Lab(s): e Amo
Water Column; Ht/Vol: 15.6 - 7.99 x 0.17 = 1.25	
Purge Est: 3,88gal	WET SAMPLE CHEMISTRIES
Calci .	Temp. Sp.
Purge Date/Time(s): 12/11/90 -1158-1230	CC) pH Cond. Turb.
Purge Method: Canto Purp	Start 100 74 783
Purge Depth(s): 50-11-7 BA+.	End-
Purge Rates (gpm):	
Purged Volume: 4.0 gal	SAMPLE ANALYSES
DTW After Purging:	Itw. Pres. Filt.  Parameters No. Meth. (Y/N)
Yield Rate: L-MH)	7 VON 624 V, 15077 4°C N
Purge Observations: FUPI PRODUCT	Vz 15078
INWATER	- *BN 27834
PURGE CHEMISTRIES	
TEMP. SP.  VOL (°C) pH COND. TURE.	TPH 27230 47504 1
= 2.0gd 10,5 7.2 777 - 4,00a 13.5 7.3 770 48	624 V115075
4,0gal 13.5 7.3 770 48	1,500
J	DW (Jay)
	TPH 15072
Comments:	Air Temp: 37°F Weather Conditions: Clarky, NO win
	メナバ
Crew Chief Signature: DONAID KASSE	Date: 12)11/90
Crew Chief Signature: DUIVITY 1 (177) (1	Date: 10 / 10

	METERS USED
Date: 12/11/92	Temp: 150
Crew: JAE OK JC EH_	pH:
Job No: 535 - 005	Cond: TLC 10
Project: Well Scapes	Turb:
Project Site: Fe Honen - Bezstul	· ·
	3
Well ID No: MAJ -20	DTW Before Sampling: 6.55
Well Condition: God	Sample Date/Time(s): 12/11/90 / 0955
Well Depth/Diameter: 16.54 /2"	Sampling Method: Tetlor Boller
Well Casing Type: AVC	Sampling Depth(s): M.Z. depth
Screened Interval: 10)	DTW After Sampling: —
Casing Ht/Lock No: 3. 631/2246	Sampling Observations:
Reference Pt: Top of pre (0,11')	Chain-of-Custody No(s):
Depth to Water (DTW): 637'	Analytical Lab(s): CAmo
Water Column; Ht/Vol: 10,17/1.66 gellons	
Purge Est: 3 gollons	WET SAMPLE CHEMISTRIES
Purge Date/Time(s): 12/11/90 0905 - 09/2	Temp. Sp.  (C) pH Cond. Turb.
Purge Method: Cont pro	Start 10,2 7,2 832 17
Purge Depth(s): 5 and -1 BAH	End-
Purge Rates (gpm):	
Purged Volume: 59 x/s	SAMPLE ANALYSES
DTW After Purging: 7.64	Try. Pres. Filt.
3 7.0 7	Parameters No. Mein. (Y/N)
Yield Rate: L-M-H /w	* VOA 624 V, 15/22 4°C N
Purge Observations: 5; /ty, 55 hend Don	Z 16090
	*BN 27232
FURGE CHEMISTRIES TEMP. SP.	774 27246 H2504 V
VOL. (°C) pH COND. TURE.	<b>.</b>
19cl 8.5 7.3 186 190	1十万
5col 11.8 7.2 718 70	
Comments:	Air Temp: 37%
Commonts.	Weather Conditions: Cluby

Crew Chief Signature: DENHID KASSPI Date: 12/1/10

Date: 12/11/90	Temp:
Crew: TAA OK IC EH	pH:
Job No: 535 -005	Cond: TLC
Project: Feldman Berss to	Turb: Lms
Project Site: relance	
	:
Well ID No: IMW-22	DTW Before Sa
Well Condition: 6002	Sample Date/Ti
Well Depth/Diameter: 14.36 / 2"	Sampling Metho
Well Casing Type: PVC	Sampling Depth
Screened Interval: /0'	DTW After Sar
Casing Ht/Lock No: 3,84' / 2246	Sampling Obser
Reference Pt: Top PVC 0.18'	Chain-of-Custoo
Depth to Water (DTW): 5.63'	Analytical Lab(
Water Column; Ht/Vol: 8.73'/1.43 gallous	, ,
Purge Est: 4 gallons	WET SA
Purge Date/Time(s): 12/11/90 0841 - 0850	Temp.
Purge Method: Cent Pup 0940 - 0810	Start 9.1°
Purge Depth(s): Scrfi -> 3At	End-
Purge Rates (gpm): 0.5 gpm	
Purged Volume: 4 gellows + 10gellows	SA
DTW After Purging: 5.981	
22 1 2 2 2 . 7 0	Parameters ***
Yield Rate: L-M-H	₹ VJA 624 V
Purge Observations:	V
	BN
PURGE CHEMISTRIES TEMP. SP.	TPH
VOL (°C) pH COND. TURE.	,,,,,
2gcl 10:5 7.7 1389 850	*+5
Agel 10.5 7.7 1389 850 Agel 10.4 7.6 1375 125	
· .	
Comments:	Air Temp: 3

	<u></u>
Temp:_	<u> </u>
pH:	
Cond:_	TLC 10
Turb:	Lms 001
:	
DTW F	Before Sampling: 5.80
	Date/Time(s): 12/11/40 1045
	ng Method: Teffor Beiler
	ng Depth(s): M.2 depth
	After Sampling:
:	ng Observations:
Chain-c	of-Custody No(s):
Analyti	cal Lab(s): CAMO
	WET SAMPLE CHEMISTRIES
	Temp. Sp. NTU
	9.1° 7.3 1105 30
Start	9.1° 7.3 1105 30
End	•
End	
End	SAMPLE ANALYSES
End-	Inv. Pres. Filt.
End-	Inv. Pres. Filt.
Parame VJA	Inv. Pres. Filt.
Parame VJA	Inv. Pres. Filt.
VOA	Inv. Pres. Filt.  eters No. Mein. (YN 624 V, 15069 4°C N  V2 15670
* VOA *BN	Inv. Pres. Filt.  Sters No. Mein. (YN)  624 V, 15069 4°C N  V ₂ 15670  27227
VOA	Inv. Pres. Filt.  eters No. Mein. (YN)  624 V, 15069 4°C N  V ₂ 15670  27227
* USA BN TPH	Inv. Pres. Filt.  624 V. 15069 4°C N  V. 15670  27227  27247 H2S04
* VOA *BN	Inv. Pres. Filt.  624 V. 15069 4°C N  V. 15670  27227  27247 H2S04

Air Temp: 330 F Weather Conditions: Clusy

Date: 12/1/90

Date: 12/11/90 Crew: DK JAC JFC Job No: 533-005 SAMPLR Project: \\ \?\ Project Site: BPRGSTAL Well ID No: P-6 Well Condition: (DCC) Well Depth/Diameter: 9.15 /1.25 Well Casing Type: PVC Screened Interval: Casing Ht/Lock No: Reference Pt: TOP OF PUC Depth to Water (DTW): 28 Water Column; Ht/Vol: 6.35 | 0.6 Purge Est: 3 Vol 857 18 GAL Purge Date/Time(s): 12/11/90 0808 0844 Purge Method: MASTERFIEX PUMP Purge Depth(s): SURF -> BOTTON Purge Rates (gpm): 7.25 OHL Purged Volume: 2.25 6AL DTW After Purging: 7.1 Yield Rate: L-M(H) Purge Observations: 51.6HTly TURBIT Slight Solvent oper PURGE CHEMISTRIES TEMP. 7.8 80 ,25 2.25 85 7-8 701

METERS USED 150 Temp: C9-105 pH: TLC-10 Cond: 1100-201 Turb: DTW Before Sampling: 2.15 (1307 Sample Date/Time(s): 12/11/90 (1530 Sampling Method: TOFION BAILER Sampling Depth(s): MID DEFTH DTW After Sampling: — Sampling Observations: VERX TUR bid
Chain-of-Custody No(s): Analytical Lab(s): CAMO WET SAMPLE CHEMISTRIES Temp. Sp.  $\mathbb{C}$ pH· Cond. 7.2 675 90 Start End-SAMPLE ANALYSES Inv. rires. Fill, No. Parameters Mein. (WY) V1 15123 62.4 U.S. 16073 27238 27245 Hasok TPH

Comments:

Air Temp: 38°
Weather Conditions: Cloudy

* 十 15

Crew Chief Signature: DONAID KASSPIC

Date: 12/1/90

METERS USED 121:190 150 Temp: Crew: Ph. JAG TFG EC CP-105 pH: 10 TIC. Job No: 535-005 Cond: Project: WPII SAMPIR LM5 001 Turb: Project Site: FPROSTO DTW Before Sampling: 41.60' Well ID No: Sample Date/Time(s): 33 Well Condition: (DOC!) Sampling Method: TETION BAILFI Well Depth/Diameter: 14.491/1.25 Sampling Depth(s): MID 1) EPTH PVC Well Casing Type: DTW After Sampling: -Screened Interval: Sampling Observations: SI, GHTIY TURBI Casing Ht/Lock No: 1.50 Reference Pt: TOP OF Chain-of-Custody No(s): Depth to Water (DTW): 4.58 Analytical Lab(s): CAMO Water Column; Ht/Vol: Purge Est: 3 VOI EST 2.4 GAL WET SAMPLE CHEMISTRIES Sp. Temp. Purge Date/Time(s): 12/11/90 0833 0903 pH. Cond. Turb. Purge Method: MASTERFIEX FUMP Start Purge Depth(s): SURF- BOTTOM End-Purge Rates (gpm): フ・みち ひゃい 3 GAL Purged Volume: SAMPLE ANALYSES DTW After Purging: 4,91 Inv. Filt. Ercs. Parameters Mein. (YNY)HOC VOA'S * 624 V116079 Yield Rate: LM(H) 1 va 16089 Purge Observations: S/164T/Y TURBID TRON PARTICLES. SOLVENT ODER **FURGE CHEMISTRIES** 27242 TEMP. COND VOL TURE 954 11.2 6.4 25 1.5 +15 20 950 /1.1 6-6 Comments: Air Temp:

Crew Chief Signature: DONAID KOSSEII Date: 12/11/96

Weather Conditions: Cloudx

150 12/11/90 Date: Temp: C4-105 JFC Crew: DK JAC, pH: 10 TLC Job No: 535-005 Cond: LMS 001 SAMPIR Project: WP1 Turb: Project Site: BeROSTO Well ID No: P-14 DTW Before Sampling: 4,16 Sample Date/Time(s): 12/11/90 1355 Well Condition: 600) Well Depth/Diameter: 16 381/ 125 Sampling Method: TEFION BAKER Sampling Depth(s): MID De & TIS Well Casing Type: 6 VC DTW After Sampling: Screened Interval: Sampling Observations: SliGHT!Y Casing Ht/Lock No: 1.51 / 9467 Chain-of-Custody No(s): -Reference Pt: TO P OF Analytical Lab(s): Depth to Water (DTW): 4 13 CAMO Water Column; Ht/Vol: 12.25 Purge Est: 3 VOI PST 2.94 GAL WET SAMPLE CHEMISTRIES Temp. Sp. Purge Date/Time(s): 12/11/90 0905-0930 Cond. 1063 Purge Method: MASTERFIPX PUMP Start Purge Depth(s): SURF- BOTTOM End Purge Rates (gpm): >.25 GPM Purged Volume: 3 GAL SAMPLE ANALYSES DTW After Purging: 10.70' (0932) Pres. Inv. Filt. Parameters nie M (XV)V116087. N Yield Rate: L-MH V216087 Purge Observations: \$1,047 19 27235 **丁URBU** 27237 **FURGE CHEMISTRIES** TEMP. COND TURE 948 45 0912 * Plus is 0927 1099 04 Air Temp: 38 Comments: 1002 Weather Conditions: (OUDY DTW-464 Date: 12/11/90 Crew Chief Signature: DONAID MASSELL

METERS USED

	METERS USED
Date: 12/11/90	Temp: 150 148 6
Crew: D.K. Jtc	PH: CP-105 (F-106 00
Job No: 535-005	Cond: TLC-10
Project: WELLSAMER	Turb: LMS-001
Project Site: BPROSTO	
Well ID No: P-17	DTW Before Sampling: 7.51
Well Condition: 6000	Sample Date/Time(s): 12/11/90 145
Well Depth/Diameter: 15 18/1.25	Sampling Method: 5.5. BAILER
Well Casing Type: PVC	Sampling Depth(s): MID DEFTH
Screened Interval:	DTW After Sampling:
Casing Ht/Lock No: 2.36 1. P467	Sampling Observations: SliGHTly TURB
Reference Pt: TOP OF PVC	Chain-of-Custody No(s):
Depth to Water (DTW): 7 44	Analytical Lab(s):
Water Column; Ht/Vol: 7.74/ 62	CAMO
Purge Est: 3 Vol +37 - 1. 84 31	WET SAMPLE CHEMISTRIES
Purge Date/Time(s): 12/11/90 1113-1137	Temp. Sp.  (°C) pH Cond. Turb.
Purge Method: MASTERFIEX FUMP	Start 9.0 7.6 519 16 (100)
Purge Depth(s): SURF- BOTTOM	End
Purge Rates (gpm): > 25 6 6	
Purged Volume: 25 GAL	SAMPLE ANALYSES
DTW After Purging: 8.10 (1138)	Inv. Pres. Filt.
Yield Rate: L-M(H)	Patameters No. Meth. (Y/N) 2 400 624 V1 16070 +000 N
Purge Observations: CIAR	V2 16080
yanga basaransa. ( / ( / / / /	*BN 27228 V
PURGE CHEMISTRIES	
TEMP. SP.  VOL (°C) pH COND. TURE.	TPH 27231 H2504 1
VOL CC) PH COND. TURE.  1 6 AL 10.2/10.2 7-4/7-4 690 20	-4. 1
25 GA- 10.4 78 738 12	长十万
Commonter	200
Comments:	Air Temp: 38° Weather Conditions: C/OUDX

Crew Chief Signature: DONALD 14755811

Date: 12/11/90

METERS USED -1 150 12/11/90 Temp: Date: (P-106 00 CP-105 pH: Crew: DK JAC IFC TLC Cond: Job No: 535-005 Project: Well SAMP + LMS 001 Turb: Project Site: BRRUSTO1 DTW Before Sampling: (5.23) Well ID No: P-18 Sample Date/Time(s): 12/11/90 Well Condition: 6001) Well Depth/Diameter: 15.28/1.25 Sampling Method: S.S. BAIFR Sampling Depth(s): MID DEFTH Well Casing Type: PVC DTW After Sampling: Screened Interval: Casing Ht/Lock No: 225 / P467 Sampling Observations: SliGHTIX TURBI. Reference Pt: TOP OF PVC Chain-of-Custody No(s): Depth to Water (DTW): 5,20 Analytical Lab(s): Water Column; Ht/Vol: 10.081 .81 Purge Est: 3 Vol eST 2 43 GAL WET SAMPLE CHEMISTRIES Temp. Sp. Purge Date/Time(s): 12/11/90 1014-1054 Cond. Purge Method: MASTER FIEX PUMP 17.2 1042 Start Purge Depth(s): SURF-BOTTOM End Purge Rates (gpm): 7.25 OFM Purged Volume: 3 GAL SAMPLE ANALYSES DTW After Purging: 7.70' (100) Inv. Fres. Filt. Mein No. (XW)V: 16086 Yield Rate: L-M(H V2 16088 Purge Observations: SIGHT IY TURBIN * BN TPH PURGE CHEMISTRIES TEMP. TURE VOIL * +15 10.2 7.5 1 GAL 1088 10.8 7.3 2 GAL 3 COAL CIOUDY Air Temp: Comments: Weather Conditions:

Crew Chief Signature: D. K+55F11

Date: 12/11/90

Date: 12/1/10 Crew: D.K. Jrk, Ttc Job No: 535-005 Project: WEIL SAMIFIE Project Site: BPR65761 Well ID No: P-20 Well Condition: 6000 Well Depth/Diameter: 14.20/1.25 Well Casing Type: PVC Screened Interval: Casing Ht/Lock No: 1.60 / P.467 Reference Pt: TO P OF PUC Depth to Water (DTW): 4.77' Water Column; Ht/Vol: 943'/.75 Purge Est: 3 Vol est 2.25 GAL Purge Date/Time(s): 12 11/90 0921-0944 Furge Method: MASTERFIEX PUMP Purge Depth(s): SURF-BOTTOM Purge Rates (gpm): 75 69~ Purged Volume: 3 GAL DTW After Purging: 5.50 Yield Rate: L-M(H) Purge Observations: SliGHT 14 TURBID PURGE CHEMISTRIES 7.3 11.7 1370 2 GAL 05 1390 7.3 10.4 05 3 GAL

METERS USED Temp: 150 pH: (9-105 Cond: TLC-10 Turb: 1-MS-001 DTW Before Sampling: 4.7) Sample Date/Time(s): 12/1/90 1415-165 Sampling Method: TEFION BAILER Sampling Depth(s): Mil) Depth DTW After Sampling: -Sampling Observations: Slicotaly TURBID Chain-of-Custody No(s): Analytical Lab(s): CAMO WET SAMPLE CHEMISTRIES pH ..... Cord. 1407 Start End ... SAMPLE ANALYSES Inv. Pres. Filt. No. Meth. (YN)624 V116076 Va16085 * BN TPH 22240 HASO4

*+15

Air Temp: 38°
Weather Conditions: (1001)

Comments:

Crew Chief Signature: DONALD K-151811

Date: 12/1/95

	METERS USED
Date: 12/1/90	Temp:
Crew: DK Jtc EC	pH:
Job No: 555-005	Cond:
Project: WPII SAMPR	Turb:
Project Site: BCX(0570)	
	<b>1.</b>
Well ID No: FIFID BLANK	DTW Before Sampling:
Well Condition: —	Sample Date/Time(s): (2/11/91 1505
Well Depth/Diameter: —	Sampling Method: TEFION BAILER
Well Casing Type:	Sampling Depth(s):
Screened Interval:	DTW After Sampling: -
Casing Ht/Lock No:	Sampling Observations:
Reference Pt:	Chain-of-Custody No(s):
Depth to Water (DTW):	Analytical Lab(s):
Water Column; Ht/Vol:	CAMO
Purge Est:	WET SAMPLE CHEMISTRIES
Purge Date/Time(s):	Temp. Sp.
Purge Method:	(°C) pH Cond. Turb.
Purge Depth(s):	Start
Purge Rates (gpm):	End
Purged Volume: —	SAMPLE ANALYSES
DTW After Purging:	Inv. Pres. Filt.
21 William Lunging.	Parameters No. Mein. (Y/N)
Yield Rate: L-M-H	Parameters No. Metin. (Y/N)  * Van's 624 v, 1607) 400 H  + 15 v2 1609)
Purge Observations:	+15 1216011 1
w.	
FURGE CHEMISTRIES TEMP. SP.	
VOL (°C) pH COND. TURE.	<u> </u>
_ /	
$\star$	
Comments:	Air Tames 200
	Air Temp: 38° Weather Conditions: Cloudx
PALIDE TO BE USED	
BALLER TO BE USED	
Crew Chief Signature: 12/ 190	Date: 12/1/90
Crew Chief Dignature, 101110	Date: 1011110

	METERS OSED
Date: 12/11/90	Temp:
Crew: DK JFC FC	pH:
Job No: 535-005	Cond:
Project: WPIL SAMPLE	Turb:
Project Site: BERUSTO	
	1.
Well ID No: TRIP BLANK	DTW Before Sampling:
Well Condition: —	Sample Date/Time(s): —
Well Depth/Diameter:	Sampling Method:
Well Casing Type:—	Sampling Depth(s): -
Screened Interval:	DTW After Sampling:
Casing Ht/Lock No:	Sampling Observations: -
Reference Pt:	Chain-of-Custody No(s):
Depth to Water (DTW):_	Analytical Lab(s):
Water Column; Ht/Vol:	<i>Cγη</i> , <i>σ</i>
Purge Est:	WET SAMPLE CHEMISTRIES
Purge Date/Time(s):	Temp. Sp.  (°C) pH Cond. [11.75.
Purge Method: —	Start
Purge Depth(s): —	End
Purge Rates (gpm): —	
Purged Volume:	SAMPLE ANALYSES
DTW After Purging: ~	Inv. Pics. Filt.
. Still Daker I M II	Parameters No. Mein. (Y/N)
Yield Rate: L-M-H — Purge Observations: —	V2-16317
range Observations.	
FURGE CHEMISTRIES	
TEMP. SP.  VOL (C) pH COND. TURE.	
Toke.	
	N
Comments:	Air Temp: $37^{\circ}$ Weather Conditions: (1000)
	reather Conditions. (1007)

Crew Chief Signature: DONAID KASSCII Date: 12/11/96

LAWLER,	MATUSKY	&	SKELLY	ENGINEERS
	CREW CH	TRE	יס מיס י	n

CREW CHIEF: D. KASSEII	
CREW MEMBER(S): 0.0	5. JOB NO: 535-005
CLIENT: BERGSTOI	6. PROJ. MGR:
4. SURVEY: WELL DEVELOPMENT	7. VEHICLE USED: RIUE VAN 8. BOAT(S) USED:
B. CREW CHIEF REPORT (COMPLETE AFTER 1. SURVEY START/END DATE	SURVEY.) 9 / 5 / 9 / 9 / 9 / 9 / 9 / 9 / 9 / 9 /
2. SURVEY START/END TIME	
3. DESCRIBE DETAILS IN SECTION C:	0800 / 1500
(a) SAMPLING GEAR WORKING PROPER	T V
(b) METERS FIELD CALIBRATED: (1)	711 mmn
(2)	AIR MONTTOR (HNIL OVA CGT)
(FIELD CALIB.MUST BE ATTACHED TO	ORIG. C.C. REPORT & SENT TO ON LOCK
(C) MAS DOWNTIME INCURRED? #HRS?	Y/
(d) ANY INCIDENTS, ACCIDENTS, PE	RTINENT OBSER.
4. WERE FULLOWING REPORTS COMPLETE	D & SUBMITTED?
(a) WEATHER CONDITIONS LISTED ON (b) RADIO LOGS	
(c) EQUIPMENT_USAGE	
(d) BOAT/VEHICLE LOGS)	
5. BOAT USAGE	<u>(3</u> /1
(a) ENGINE HOURS	
(b) RADIO LOGS	TO
(C) BOAT LOCATION	
6. CHAIN OF CUSTODY COMPLETED. SAM	PLES SIGNED OVER.
	Here was the state of the state
COMMENTS/OBSERVATIONS HER UPD ON SITE 0850.	Prepared to Consider Annot
AT MW-18 FILED A WOA	
LVOA VIA HAS ABOUT	3/4 PRODUCT, THE OTHER BOTT
HAVE A LITTIR BOT ON TH	
PRODUCT WAS ON THE OUT	SiDE OF THE BAILER. ISET DA
UP AT BIP 6, AND 7 SET WELL, NEXT WE DID BIEGIL	-UP AT MW-18 BOTH DEVELOP
OF SILT BUT CLEARED UP.	AND MW-20. BIP-11 HAD A LOT
At MW-22 We Wepe Son	Mh,-20 Clearen Up PASILY
PUMP NOT PNOUGH WATER	ABIR TO USE THE CENTRIFU GAL
MASTERFIEX PUMP WEIL CLEA	RAD UP.
	\$P\$《加速程》中的扩张数据,通过100mm。 \$P\$100mm。 \$P\$100mm (\$P\$100mm) \$
3 1011-60	
(a) (size)	
Develorment WATER FR	COM MW-18-22 P-6- P-11
DRUMMED AND LEFT ON ST	TE BX MW-18
	and the state of t
보는 1일 - 1일 전 전 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
TE SEND ORIGINAL CREW CHIEF REPORT TO	QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION
SEND YELLOW COPY TO WAREHOUSE. R	ETAIN PINK COPY FOR C.C. FILE.
	$\sim 1 \sim 1$
C.C. SIGNATURE DONAID KASSA	DATE: $O(5)$
USE ADDITIONAL SHEET(S), IF NECES	SARY. REC'D OAS
OUD RUDITIONAL SHEET (S). IF NECES	SARY. MECTO COAS

FEB 0 6 1991

VOTE: SEND ORIGINAL CREW CHIEF REPORT TO QA/QC WITHIN 5 DAYS OF SURVEY COMPLETION SEND YELLOW COPY TO WAREHOUSE. RETAIN PINK COPY FOR C.C. FILE.

C.C. SIGNATURE DONAID

KASSell

DATE: 2/13/91

USE ADDITIONAL SHEET(S), IF NECESSARY.

REC'D QAS

LAWLER, M

Job NO: 535-005

OK. gmy

Crew: Date:

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD METER CALIBRATION AND/OR CHECK
DATA SHEET

Site: BROSTOL Oper: Well SAMPIT Calib. By: VIVIA

l				 1			1	 	 					<del>.</del>	 					<del></del> ;
COMMENTS			,	the 6.7					•									REC'D QAS	FEB 1.3 1991	
q				Gp 106; 6.9 Woles			į.													
S DIFF.		; ;			10								4.						V 37 V	
ADJ TOª											00)				7.0 7.0					
OBSERVED VALUE	95	000	125	0   7,0	1 142	9.8 9.9						/,0			.   7.3	24 77	66 6			
EXPECTED (VALUE		9/	/	1	140 4	0.01				0/	061				7,0 7,2		10.0 9.9			
EXP	6.7	100	0%	7.0	1,0	10.0				0/	(00)	01				4.0 4.0	100			
THERM NO./ TEMP. ('C)	. C:			113.6			? 				sc*									
THER. TEMP.				871																が対象
TIME	0360	7								1515										
METER No./ PROBE No.	700	TV8810/77		G107 16.106						100/	TURSIDITY				6010) 5010					

ppm readings for dissolved and % Por dissolved oxygen and pH meter calibrations, record adjustments (include % oxygen meter calibration).

but by Diff. calculation for conductivity calibration checks: \$ Diff =  $\frac{\mathrm{Dx} - \mathrm{Ob}}{\mathrm{Cond}}$ 

x - Ob x 100

TIEDE SAIN	II LING LOG
	METERS USED
Date: 2/12/9/	Temp: \$48
Crew: DK JMCH	pH:C9-107
Job No: 535.005	Cond: 7L(-566
Project: Well Samere	Turb:
Project Site: $B \in \mathcal{R} \supset \mathcal{R} \subset \mathcal{R}$	
•	
Well ID No: 10000-15	DTW Before Sampling: 8 c1
Well Condition: 6000	Sample Date/Time(s): 211219 1210-121
Well Depth/Diameter: 15.51/2	Sampling Method: MASTER TEX PUME.
Well Casing Type: P	Sampling Depth(s): MID DEPTH
Screened Interval: Bollion 10	DTW After Sampling:
Casing Ht/Lock No: STEEL OVC 123	Sampling Observations: SliGHTLY TURBIT
Reference Pt: TOPOF PUC	Chain-of-Custody No(s):
Depth to Water (DTW): 8.601	Analytical Lab(s):
Water Column; Ht/Vol: 6.9// 1.18	TAKEN WITH BAILER
Purge Est: 3 Vol 457 1.18 x 3 = 3.546	WET SAMPLE CHEMISTRIES
	Temp. Sp.
Purge Date/Time(s): 2/12/91 1046 1049	(°C) pH Cond. Turb.
Purge Method: (PNTRIFICOAL QUMP	Before 6,8 7,6 7,74 7,5
Purge Depth(s): BOTT > SURF	After
Purge Rates (gpm): 2.5 Copm	3.
Purged Volume: 22 (DAL)	SAMPLE ANALYSES
DTW After Purging: DR X	Inv. Pres. Filt.
Yield Rate: L-M(H)	Parameters No. Meth. (Y/N) VOAS-624 VI18565 SAMPLED
Dunes Olamori	V 18564 WITH
COLOR, FUEL ODOR	BNA'S 18563 PUMP
PURGE CHEMISTRIES	VOA'S 624 V. 18562
TEMP. SP.  VOL. (°C) pH COND. TURB.	V2 1856/ SAMPLED
3 GAL. 85 7.4 712 90	18761 SHATT
	BNA'S 18554 BAILER
17 GAL 8.9 7.4 701 50 27 GAL 8.8 7.4 706	
	REC'D QA
Comments:	Air Temp: $25$
AFTER FILLING VOPS WITH	Weather Conditions: SUNHY

PUMP. THE TURBIDITY WAS 7
AFTER FILLING THE SPMI VOLITIE
THE TURBIDITY WAS 3
Crew Chief Signature: DONALD KASSCIL

Date: 2/13/91

Date:	917	ja;
Crew:	DK	TMCK
Job No:	535-	005
Project:_	WALL	SAMFIF
Project S	Site: BPF	ROSTOI

Well ID No: MN- 14.6

Well Condition: (2001)

Well Depth/Diameter: 13.5 1/3

Well Casing Type: PVC

Screened Interval: Botton 101

Casing Ht/Lock No: STOP, PVC, 2246
Reference Pt: TOP OF PVC

Depth to Water (DTW): 6.75

Water Column; Ht/Vol: 6.56/1.12

Purge Est: 3 Vol PST 1.12 X 3=3.36 GAL

Purge Date/Time(s): 3/12/01/1304-1335

Purge Method: CPNTRIFIGAL GUMF

Purge Depth(s): BCTTCM-SURF

Purge Rates (gpm): 1 6 PM

Purged Volume: 27 GAL

DTW After Purging: 10.13

Yield Rate: L-M-H

Purge Observations: BROWNISH COLOR CLEARED UP STIGHT SHEEN

NOTICED

PURGE CHEMISTRIES

			TANKIN I	
	TEMP		SP.	
VOL.	(°C)	pН	COND.	TURB.
2 COAL	8.3	7.4	743	170
10 GAL.	8.7	7.4	885	35
20 GAL	8.7	7.5	905	45
25 GAL	9.1	7.5	930	10

Comments:

-	METERS USED
Temp:_	848
рН:	CF-107
Cond:	TLC 560
Turb:	LMS 001

DTW Before Sampling: 6.90'

Sample Date/Time(s): 2/2/0/ 1440

Sampling Method: MAST ERFLEY STATE

Sampling Depth(s): MID DEFT

DTW After Sampling: -

Sampling Observations: CIRAR S11641

Chain-of-Custody No(s):

Analytical Lab(s):

WET SAMPLE CHEMISTRIES

	Temp.		Sp.	TICILO	
	(°C)	pH	Cond.	Turb.	
Before	7.8	7.5	947	10	
After				10	

SAMPLE ANALYSES

<u>Parameters</u>	Inv. No.	Pres. Meth.	Filt.
VOAS 624	V. 185	05 400	N
$\downarrow$	V2-185	506	1

Air Temp: Weather Conditions:

FEB 13 1991

Date:	2/12/01
Crew:	CK. JMCK
Job No:_	555-005
Project:_	Well SAMOR
Project S	Site: BERGSTO1

| METERS USED | QC | Rule | PH: (p | 0 6 | 6 | 107 | Cond: | TLC * 10 | 560 | Turb: | 101 | |

DTW Before Sampling: 6.14

DTW After Sampling:

Chain-of-Custody No(s):

Analytical Lab(s):

Sample Date/Time(s): 2.12-91 /1507

Sampling Observations: CIRAR

Sampling Method: MASTERFIEX FULLY

Sampling Depth(s): MiD DEFTH

Well ID No: MW-AA
Well Condition: 6000

Well Depth/Diameter: 16.07/3

Well Casing Type: 605

Screened Interval:

Casing Ht/Lock No: 3780 360 2004

Reference Pt: TOF CFFUC

Depth to Water (DTW): 6.13

Water Column; Ht/Vol: 10.85 1.85

Purge Est: 3 VOI est 1.85 x 7:5.55 6AL

Purge Date/Time(s): 2/12/91/14/0-1455

Purge Method: MASTERFIEX PUMP

Purge Depth(s): BoTT → SURT

Purge Rates (gpm): 5-25 69M

Purged Volume: 8 GAL

DTW After Purging: 6.14

Yield Rate: L-M(H)

Purge Observations: CIPAR, SIGHT

FUPL ODOR

	V	ÆT SÆ	MPLE	CHEMI	STRIES
		Temp.	FIX	Sp.	
		(°C)	pΗ	Cond. /	Turb.
Before		4.8e	7,9	885	DS.
After				,	0.7

	DATA)	ILLE A	NALY	2F2	
Paramete	ers	Inv. No.	Pre Me		Filt.
VOAS	624	V118	514	you	N
	÷	V2-18	515	V	V

	PU	IRGE (	CHEMISTI	RIES	
·	TEMP.		SP.		
VOL.	(°C)	pH	COND,	TURB.	
Igal.	70	7.6	875	17.	
2.5	6.0	7.7	890	3	
4,5	6,5	7.7	890	1.75	
Tgel	5.9/5,9	78/1.9	203/984	0.7	

Comments:

Propon 7.

REC'D QAS

FEB 1 3 1991

Air Temp:  $\frac{\partial}{\partial S}$  Weather Conditions:

SUNNY

Crew Chief Signature: DONATO KASSET

Date: 2/12/91

1
Date: 2/12/9/
Crew: DK, JMCH
Job No: 535-005
Project: WPI SAMPIT
Project Site: Berwar

Well ID No: B/P-(c

Well Condition: (000)

Well Depth/Diameter: |9.|8'|1.25'

Well Casing Type: PVC

Screened Interval:

Casing Ht/Lock No: 1.54 / 6-467

Reference Pt: TOF OF PUC

Depth to Water (DTW): 3.61

Water Column; Ht/Vol: 15.571/1.25

Purge Est: 3 (10/ est 1. 2.5 x 3. 3.75 CDAL

Purge Date/Time(s): 2/12/91/014-1120

Purge Method: MASTERFIEX FUMF

Purge Depth(s):

Purge Rates (gpm): <.25 GFM

Purged Volume: 5 GAL

DTW After Purging: 6 10

Yield Rate: L-M-H

Purge Observations: BROWNISH COLOR

CIPARED UP

PT	JRGE (	CHEMISTE	RIES	
TEMP		SP.		
VOL. (°C)	pH	COND.	TURB.	
1 yel 5.3	7.6	.6.35	175	
2.5 ef 5.8		.625	7.5	
11291	7.8	640	2,4	
5.0 5.3	7.6	,635	1.0	

Crew Chief Signature:_DONAID

Comments:

After 7 mins wend to 3 creases of began pully alst of ar

KASSEIL

METERS USED Temp: (9-106 pH: Cond: TLC-10 LMS-001 Turb:

DTW Before Sampling: 4 0

Sample Date/Time(s): 2/12/91 130

Sampling Method: MASTER Flex Pury

Sampling Depth(s): MID DEPTH

DTW After Sampling:

Sampling Observations: CLAR, NO ODO.

Chain-of-Custody No(s):

Analytical Lab(s):

7	WET SA	MPLE	CHEN	MIS'	TRI	ES	,
	Temp.		Sp.				٠.
	(C2)						

Before

After

SAMPLE ANALYSES

Inv. Pres. Filt. Meth. (Y/N)

FEB 1 3 1991

Air Temp: み5⁶ Weather Conditions:

Date: 2/13/91

	METERS USED
Date: 2/12/91	Temp: 87/
Crew: DK JMCH	pH: (4-106
Job No: 575-005	Cond: TLC-10
Project: 10011 SAMER Project Site: BCRGSTOI	Turb: LMS-001
Project Site: BERGSTOI	
Well ID No: RE	DTW Before Sampling: 582
Well Condition: (p 3 < i)	Sample Date/Time(s): 2.12-91 /1350
Well Depth/Diameter: 15.84/125	Sampling Method: MASTORE OF QU
Well Casing Type:	Sampling Depth(s): An a Per-L
Screened Interval:	DTW After Sampling: —
Casing Ht/Lock No: 2.85- / P-467	Sampling Observations: FAIRLY CLEAR, SILLET SEA
Reference Pt: TOFCF PVC	Chain-of-Custody No(s):
Depth to Water (DTW): 5.70	Analytical Lab(s):
Water Column; Ht/Vol: 10-14 0.81	
Purge Est: 3 Vol 67 0.8147= 2.4	WET SAMPLE CHEMISTRIES
Purge Date/Time(s): 2 12 9 /1247-13	Terip. Sp.
Furge Method: MASTER FIEX FUM	
Purge Depth(s): Bott -> SURT	
Purge Rates (gpm): c . 25 GPM	After
Purged Volume: 7504/	SAMPLE ANALYZOPO
DTW After Purging. 582'	SAMPLE ANALYSES
	Inv. Pres. Filt.  Parameters No. Meth. (Y/N)
Yield Rate: L-MH	VOAS 624 V, 17165 400 N
Purge Observations:	V2 18517 V
PURGE CHEMISTRIES TEMP. SP.	
VOL. (°C) pH COND. TURB.	

	PUR	GE C	HEMIST	RIES	
VOL.	TEMP.	рН	SP.		
* / gel	7.8	7.5	824	TURB.	
x 2 gent	8.8	7.4	826	14	
X 3 gal	8.6	7.4	816	25	
1 gal	8.6	7,6	838	8.0	
Comme	nts:	0	, 11.	. 141 (	

REC'D QAS

FEB 1 3 1991

Air Temp: Weather Conditions:

Comments:

Rungs on S * Mild petrol landfill woor.

Pump on Fafter & sale (aprel 2 miles) @1500

Redult brown trut

Pump on Sapter 3.5 sale (3) minus Smiss to refill you.

Crew Chief Signature: DONAII) KASSEII

Date: 2/13/91

	METERS USED
Date: $3/5/9$	Temp:
Crew: DK, JFC	pH: (4-106 - (F-108 Q)
Job No: 535-005	Cond: +11-10 - TLC - 560
Project: WELL SAMER	Turb: LMS-001
Project Site: BENGSTOI	
Well ID No: PF-2	DTW Before Sampling: 1.75
Well Condition: (p 0 0 0 0)	Sample Date/Time(s): 3/5/9/ 1358-1410
Well Depth/Diameter: 945/2	Sampling Method: MASTERFIEX PUMP
Well Casing Type: PVC	Sampling Depth(s): TetlenBailer
Screened Interval:	DTW After Sampling:
Casing Ht/Lock No: 1.55 / P-806	Sampling Observations: SliGHTLY TURE
Reference Pt: TO & OF PUC	Chain-of-Custody No(s): NO ODOR
Depth to Water (DTW): 170	Analytical Lab(s):
Water Column; Ht/Vol: 7.75   1.3	
Purge Est: 3 Vol-857: 1.3 x 3: 3.9 CoAG	WET SAMPLE CHEMISTRIES
Parge Date/Time(s): 3/5/9)-1307-134	Temp. Sp.
Purge Method: MASTER FIRE FUMF	Before 8.6 9.6 355 15 Pum
Purge Depth(s): SURF-> BOTT	He RAIL
Purge Rates (gpm): < 25 GPM	After
Purged Volume: 4 Co AL	SAMPLE ANIAL YORG
DTW After Purging: 1.97	SAMPLE ANALYSES
	Inv. Pres. Filt.  Parameters No. Meth. (Y/N)
Yield Rate: L-MH	VOA'S 624 418381 400 A BAILE
Purge Observations: SliGHT V TURBID	V2 18382
NO ODOR	BASE 15350 / PUMI
PURGE CHEMISTRIES TEMP. SP.	NEUTRALS
VOL. (°C) pH COND. TURB.	
GAL 8.4 95/9.7 298 98	
6AL 8.4 9.7 355/366 20 6AL 8.4 9.7 376 8	
GAI 8.41 9.7 376 8 GAI 5.5 9.7 375 5	
Comments:	Air Temp: 450
	Weather Conditions: S V V /

DONAIS HASSON

Crew Chief Signature:___

MAR 0 6 1991

REC'D

QA!

Date: 3/6/91

	METERS USED
Date: 4/9/91	Temp:
Crew: THC TMGK	pH:
Tob No: 535 - 00 \$	Cond:
roject: Brysty)	Turb:
Project Site: Berg 5-15)	
Well ID No: $B - II$	DTW Before Sampling: 5 60
Well Condition: 6011	Sample Date/Time(s): $4/9/91 - 1045$
Well Depth/Diameter: 16.13' / 1'41'	Sampling Method: Pewisteltie Pop /Tellon ic
Well Casing Type: /// c	Sampling Depth(s): 11.2 Surces
Screened Interval: /o'	DTW After Sampling: 5.621
Casing Ht/Lock No: 2,9'	Sampling Observations: Clear slight odor
Reference Pt: Top of PVC	Chain-of-Custody No(s):
Depth to Water (DTW): 5.52'	Analytical Lab(s): CHMO
Water Column; Ht/Vol: 10.62' /1.13 gels	
Purge Est: $3vNs = 3.5 \frac{1}{5}$	WET SAMPLE CHEMISTRIES
Purge Date/Time(s): 4/9/9/ 1015- 1030	Temp. Sp. CC) pH Cond. Turb.
Purge Method: Perástaltic Purp	Start
Purge Depth(s): Sirf -> BA+	End
Purge Rates (gpm):	· ·
Purged Volume: 496/5	SAMPLE ANALYSES
DTW After Purging: 5,80'	Inv. Pres. Filt.
	Parameters No. Meth. (Y/N)
Yield Rate: LMH	VOTA GRY V. A17145 4°C N V2 A17144
Purge Observations: Clear, strong flut on old Slight kyor of product	ν ₁ /1/7/7
, ,	
PURGE CHEMISTRIES	

Comments:

Air Temp: 75° F Weather Conditions: Partly Clory, Slight Breeze

REC'D QAS

Crew Chief Signature: MAY 62 1991

Date: 4/9/91 MAY 62 1991

APPENDIX I
SURFACE WATER SAMPLING

#### APPENDIX I

#### SURFACE WATER SAMPLING

On 11 December 1990 surface water samples were collected from the drainage system at two locations identified as S-1 and S-2 (See Plate 1 of the Summary Report). Soil samples were also collected from the stream bottom.

Sample containers and preservatives are summarized below:

SAMPLE TYPE	MATRIX	VOLUME	PRESERVATIVES
VOC	water	2-40 ml	
VOC	soil	2-40 ml	
Base neutral	water	11	
Base neutral	soil	250 g	
Petroleum hydrocarbon	water	11	$H_2SO_4$
Petroleum hydrocarbon	soil	250 g	

Field data sheets follow.

LAWLER, MATUSKY & SKELLY ENGINEERS FIELD DATA SHEET FOR SOIL/SEDIMENT SAMPLES Job No: 535-05

Oper: Thermameter No:

	COMMEN'IS							
	BOT.				# 16093	A 16095		
Miles	SAMPLE PARAMETERS				624-1104+15	624 (100 +15		
SAMPLE BOTTLES	BOT.				4 16092 LZTA44 LZTI40	A 16094 L 27191 L 27139		
		VOA 624 BN 625 TPH	VOA 624 BN 625 TPH		624 VOA +15 625 BN +15 TOH	624 VOA 625 BN TPH		
	CLR. ODOR							
	TEXT.	NA	A/W	N/N/				
	METHOD	отр- Боннер	20 Hies	Soffles	School States	stamless		
	SMPL	Sfg	de com	Me pal	base Sheam	1520 Base (530 smale		
	TIME				1625	35.2		-
	TA.	> X	₹ 100	3	<i>'</i> 0	(n ~ 1		

te: 12/11/90 ew: ECH//DK/TC te: Bergsfol/Fliv er:

LAWLER, MATUSKY & SKELLY ENGINEERS FIELD DATA SHEET FOR SURFACE WATER Job No:535-005

Thermometer No:
SCT No:
Velocity Meter No:

	COMMENTS	No Product	St. Slottsker	nater gurte	Norn, Clear Water	1045 of Fe	Back and so										 €
	BOT.			15082		19185											
SAMPLE BOTTILES	EERS			624 VOA		624 104											
SAMPLE	BOT.	17714	-27463	1808/	13209	7713/	16096										
	SAMPLE PARAMETERS		HOL	624 VAH-15 15081	TDH MATIS	\$	HOLL SWY (S										
CRK.	WDTH (ft)	7	7	1	3		4.6										
CRK. DPTH / ft INT.	(Rt-Lft) (ft/in)		ECH =	17'	23												
	FLOW MEAS.	ECH	}		\$ A	1	W/N										
COND.	/soqumπ) (mp	7	OBTAINED	654	TWB = 3 NTU	069	Turb = 125NTU										
_	Hd.	No	OBI		7.3	,	4.6										
	TEMP.			22.2	Q	4.10											
	TIME (HHMM)			477	1420	1940	0541										
SAMPLE	DEPTH (ft/in)	sfc		PIW	1420 a	MIG	aepin	,									
	A.	>	4	7	$\infty$	>	,										1

# APPENDIX J LABORATORY ANALYSES

#### APPENDIX J

#### LABORATORY ANALYSES

Laboratory analyses were completed for VOCs, base neutrals, and petroleum hydrocarbons. Metals, PCBs, acid extractable compounds, and asbestos were not tested for because these analytes were found to be of no concern for the downgradient properties.

CAMO Laboratories of Poughkeepsie, NY completed the analyses for VOCs and base neutrals. Envirotest Laboratories of Newburgh, NY completed the petroleum hydrocarbon tests, which were all incorporated into the CAMO analytical reports.

EPA GC/MS Method 624 was used for the water VOC tests. This method was also used for the soil tests, except for soil samples collected 20 February 1991 for which Method 8240 was employed. EPA GC/MS Method 625 was used for the base neutral tests and infrared spectrophotometry Method 418.1 was used for petroleum hydrocarbons.

The laboratory reports with chain-of-custody records follow:

Camo Report No.	Sampling Date	Comments
90-12-5176	11 Dec 1990	Groundwater monitoring wells (MW-18 MW-20, B-6, B-9, B-14, B-17, B-18, B-20) and stream water and soil samples
91-01-0423	18 Jan 1991	Tunnel water
91-02-0635	5 Feb 1991	Oil in MW-18
91-02-0722	7-8 Feb 1991 12 Feb 1991	Soil and water samples from Test Pits TP-1 to TP-9. Groundwater monitoring wells (MW-18, MW-20, MW-22, B-6, B-11)
91-02-0859	20 Feb 1991	Soil and water samples from Test Pits TP-A to TP-E
91-03-1080	5-6 Mar 1991	Groundwater monitoring wells (PP-1, PP-2, B-6)
91-04-1684	9 Apr 1991	Groundwater monitoring well (B-11)



## CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES
AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > January 10, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt Laboratory Director CAMO LABORATORIES, INC 367 VIOLET AVENUE

POUGHKEEPSIE, NEW YORK 12601

(914) 473-9200

FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

Lawler, Matusky & Skelly Engineers

One Blue Hill Plaza

P.O. Box 1509

Pearl River, New York 10965

P.O. #: Typed by:

mbb

Invoice #:

Date of Invoice:

90-12-5172

1-10-91

Attn: Stu Bassell

LMS Project No.: 535-005

Analytical Report

Sample Identification

(01) See attached

Date Samples Collected: 12-11-90 Date Samples Received: 12-12-90

Samples Collected By: Client Samples Delivered By: Hugo Matrix:

Water

Unit/ Parameters Measure

(01)

See attached

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

CAMO LOG NO.: 90-12-5172

TABLE I

Sample Identifications 	   Method 624 		   TPH   mg/L  ========	   %   Solids
(01) MW-18	*	====   *	558	========
(02) MW-20	*	*	3	
(03) MW-22	*	*	4	
(04) BP-6	*	*	25	
(05) BP-9	*	*	<3	
(06) BP-14	*	*	< 4	
(07) BP-17	*	*	8	
(08) BP-18		*	2	
(09) BP-20	*	*	⟨3	
(10) SS-1	*	*	8800**	77
(11) SS-2	*	*	1800**	65
(12) SW-2	*	*	58	
(13) SW-1-B	*	*	⟨3	
(14) Trip Blank		,		,
(15) Field Blank				
	;;  			
	;;     			

^{**} Sample Identifications (10) and (11) are soils and reported in mg/kg (dry wt.)

^{*} See Attached.

Laboratory Mana: CRMC Laboratories, Inc. Sample ID: 5172-01
Client Name: Lawler, Matusky & Skelly Eng. Date Collected: 12-11-90
Froject/Facility Manae: Date Received: 12-12-90
Sample Location: MV-13 Date Analyzed: 12-14-90
Matrix: Water
Wethod: EPA 624 Date Reported: 1-10-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	
1	Chloromethane	10.0	!	ן טן	i i
;	Bromomethane	10.0	1	U	
1	Vinyl Chloride	10.0	!	l U l	
1	Chloroethane	10.0	260	1	!
1	Methylene Chloride	5.0	!	U	
!	Trichlorofluoromethane	5.0	1	l U	
}	Trans-1,2-dichloroethylene	5.0	1	U	
1	1,1-Dichloroethene	5.0	1	U	!
!	1,1-Dichloroethane	5.0	160	1 1	
1	Dichlorodifluoromethane	5.0		·   U	ĺ
1	Chloroform	5.0	1	U	!
1	1,2-Dichloroethane	5.0	8	1	
1	2-Chloroethylvinyl Ether	10.0	1	U	
1	1,1,1-Trichloroethane	5.0	1	U	
!	Carbon Tetrachloride	1 5.0	!	U	
1	Bromodichloromethane	5.0	1	U	
!	1,2-Dichloropropane	1 5.0	!	U	
1	cis-1,3-Dichloropropene	5.0	1	U	
!	Trichloroethene	5.0	!	U	
!	Dibromochloromethane	5.0	!	U	
1	1,1,2-Trichloroethane	5.0	1	U	
ł	Benzene	5.0	!	U	
ł	trans-1,3-Dichloropropene	5.0	1	U	
}	Bromoform	1 5.0	1	! U !	
1	Tetrachloroethene	1 5.0	1	U	
ł	1,1,2,2-Tetrachlorethane	5.0	1	l u	
!	Toluene	5.0	1	U	Í
1	Chlorobenzene	5.0	1	ן ט ן	
!	Ethylbenzene	5.0	1	U	
1	Acrolein	100.0	1	U	ĺ
!	Acrylonitrile	100.0	{	U	i

Laboratory Name: CAMO Laboratories, Inc.

Client Name: Lawler, Matusky & Skelly Eng.
Project/Facility Name:

Sample Location: MW-20
Matrix: Water

Date Received: 12-17-90
Date Analyzed: 12-17-90

Method: EPA 624 Date Reported: 1-10-91

~	COMPOUND	Detection Limit (ug/L)		Sample Conc. (ug/L)	Q	_
	Chloromethane Bromomethane	10.0	1		! U	!
1	Vinyl Chloride	10.0 10.0	i		! U	i
1	Chloroethane	(A)	i			i
i	Methylene Chloride	10.0 5.0	i		U	i
!	Trichlorofluoromethane	5.0	i		U	i
!	Trans-1,2-dichloroethylene	5.0	ı		! U	i I
! .	1,1-Dichloroethene	5.0	į		! U	1.
1	1,1-Dichloroethane	5.0	. 1	6	ı U	. 1
Ì	Dichlorodifluoromethane	5.0	1	O	U	1
1	Chloroform	5.0	1		U	1
į	1,2-Dichloroethane	5.0	!		U	. !
i	2-Chloroethylvinyl Ether	10.0	į		l u	;
i	1,1,1-Trichloroethane	5.0	;		! U	!
ì	Carbon Tetrachloride	5.0	ì		Ü	į
ĺ	Bromodichloromethane	5.0	- 1		i u	
İ	1,2-Dichloropropane	5.0	i		U	i
1	cis-1,3-Dichloropropene	5.0	į		U	i
1	Trichloroethene	5.0	i		U	i
1	Dibromochloromethane	1 5.0	1		ן ט	1
1	1,1,2-Trichloroethane	5.0	i		U	Ì
1	Benzene	5.0	1	1 L 7-7-31	l U	!
!	trans-1,3-Dichloropropene	5.0	1		ן ט	1
1	Bromoform	5.0	1		ן . ט	!
1	Tetrachloroethene	5.0	!		U	- 1
1	1,1,2,2-Tetrachlorethane	5.0	!		l U	1
1	Toluene	5.0	!		U	1
1	Chlorobenzene	5.0	1		U	1
1	Ethylbenzene	5.0	!		ן ט	1
!	Acrolein	100.0	!	e de la companya della companya della companya de la companya della companya dell	U	1
	Acrylonitrile	100.0	1		¦ U	!

Laboratory Name: CAMO Laboratories, Inc.

Client Name: Lawler, Hatusky & Skelly Eng.

Froject/Facility Name:

Date Received: 12-11-90

Date Received: 12-12-90

Date Analyzed: 12-17-90

Matrix: Vater

Method: EFA 624

Date Reported: 1-10-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	
	Chloromethane	10.0		U	ĺ
!	Bromomethane	10.0	ŀ	U	1
!	Vinyl Chloride	10.0	1	l U	1
1	Chloroethane	10.0	!	U	!
i	Methylene Chloride	5.0	!	¦ U	1
1	Trichlorofluoromethane	1 5.0	1	U	1
!	Trans-1,2-dichloroethylene	5.0	1	U	1
!	1,1-Dichloroethene	5.0	!	¦ U	1
1	1,1-Dichloroethane	5.0	24	1	1
1	Dichlorodifluoromethane	5.0	1	:	1
1	Chloroform	5.0	!	¦ U	1
1	1,2-Dichloroethane	1 5.0	1	U	1
1	2-Chloroethylvinyl Ether	10.0	1	¦ U	!
1	1,1,1-Trichloroethane	5.0	65	1	!
1	Carbon Tetrachloride	5.0	!	¦ U	1
1	Bromodichloromethane	5.0	1	¦ U	1
!	1,2-Dichloropropane	5.0	1	U	1
!	cis-1,3-Dichloropropene	5.0	1	¦ U	1
!	Trichloroethene	5.0	1	U	1
!	Dibromochloromethane	5.0	1	U	1
1	1,1,2-Trichloroethane	5.0	1	¦ U	1
1	Benzene	5.0	1	l U	1
1	trans-1,3-Dichloropropene	5.0	1	U	1
!	Bromoform	5.0	1	U	1
!	Tetrachloroethene	5.0	1.	U	1
1	1,1,2,2-Tetrachlorethane	1 5.0	1	U	!
!	Toluene	5.0	1	· U	!
1	Chlorobenzene	5.0	1	U	1
1	Ethylbenzene	5.0	1	l U	1
ŀ	Acrolein	100.0	1 1	U	1
	Acrylonitrile	100.0	1	ן ט	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 5172-04
Client Name: Lawler, Matusky & Skelly Eng. Date Collected: 12-11-90
Project/Facility Name: Date Received: 12-12-90
Sample Location: BP-6 Date Analyzed: 12-17-90

Matrix: Water
Method: EPA 624
Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane	10.0	!	U
Bromomethane	10.0	1	l U l
Vinyl Chloride	10.0	İ	U
Chloroethane	10.0	Ì	ן טן
Methylene Chloride	5.0	1	U
Trichlorofluoromethane	5.0	1	U
Trans-1,2-dichloroethylene	5.0	İ	U
1,1-Dichloroethene	5.0	!	U
1,1-Dichloroethane	5.0	1	l U l
Dichlorodifluoromethane	5.0	1	ן טן
Chloroform	1 5.0	1	U
1,2-Dichloroethane	1 5.0	1	U
2-Chloroethylvinyl Ether	10.0	1	U
1,1,1-Trichloroethane	5.0	1	U
Carbon Tetrachloride	5.0	1	U
Bromodichloromethane	5.0		U
1,2-Dichloropropane	5.0	1	U
cis-1,3-Dichloropropene	1 5.0	1	U
Trichloroethene	5.0		U
Dibromochloromethane	1 5.0	1	U
1,1,2-Trichloroethane	5.0	1	U
Benzene	1 5.0	1	U
trans-1,3-Dichloropropene	5.0	-	U
Bromoform	1 5.0	1	U
Tetrachloroethene	5.0	1	U
1,1,2,2-Tetrachlorethane	1 5.0	1	ן ט ן
! Toluene	5.0	1	U
Chlorobenzene	1 5.0		U
Ethylbenzene	5.0	1	U
Acrolein	100.0	1	U
Acrylonitrile	100.0	1	U

Laboratory Name: CAMO Laboratories, Inc., Sample ID: 5172-05
Client Name: Lawler, Matusky & Skelly Eng. Date Collected: 12-11-90
Project/Facility Name: Date Received: 12-12-90
Sample Location: BP-9 Date Analyzed: 12-17-90

Matrix: Water
Method: EPA 624
Date Reported: 1-10-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
! !	Chloromethane Bromomethane	10.0		ן ט ן
į	Vinyl Chlorida	10.0		ן טן
į	Chloroethane	10.0	!	ן ט ן
1	Methylene Chloride	5.0	· ·	ן טן
İ	Trichlorofluoromethane	5.0	!	ן ט ן
ĺ	Trans-1,2-dichloroethylene	5.0	i	ן ט
1	1,1-Dichloroethene	5.0	i	ן ט
!	1,1-Dichloroethane	5.0	18	
1	Dichlorodifluoromethane	5.0	1	י ט ו
!	Chloroform	5.0	İ	U
;	1,2-Dichloroethane	1 5.0	1	U
ł	2-Chloroethylvinyl Ether	10.0	1	ן ט ן
1	1,1,1-Trichloroethane	5.0	!	U
ł	Carbon Tetrachloride	5.0		U .
1	Bromodichloromethane	1 5.0	1	U
!	1,2-Dichloropropane	1 5.0	!	U
l	cis-1,3-Dichloropropene	1 5.0	1	U
1	Trichloroethene	5.0		U
1	Dibromochloromethane	5.0	1	U
!	1,1,2-Trichloroethane	5.0	1	U
1	Benzene	5.0	1 .	U
1	trans-1,3-Dichloropropene	5.0	1	U
ì	Bromoform	5.0	1	U
i	Tetrachloroethene	5.0		U
i	1,1,2,2-Tetrachlorethane	5.0		U
i	Toluene	5.0		ן ט ן
i	Chlorobenzene	5.0		U
i	Ethylbenzene	5.0	i .	U
i I	Acrolein	100.0	1	U
i	Acrylonitrile	100.0		U

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 5172-06
Client Name: Lawler, Matusky & Skelly Eng. Date Collected: 12-11-90
Project/Facility Name: Date Received: 12-12-90
Sample Location: BF-14 Date Analyzed: 12-17-90

Matrix: Water

Method: EPA 624 Date Reported: 1-10-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	-
!	Chloromethane	10.0	1	¦ U	!
!	Bromomethane	10.0	1	U	1
1	Vinyl Chloride	10.0	!	U	1 .
1	Chloroethane	10.0	!	¦ U	1
}	Methylene Chloride	5.0	!	U	!
!	Trichlorofluoromethane	5.0	!	¦ U	1
!	Trans-1,2-dichloroethylene	5.0	!	¦ U	1
1	1,1-Dichloroethene	5.0	!	{ U	!
!	1,1-Dichloroethane	5.0	!	¦ U	1
}	Dichlorodifluoromethane	5.0		·¦U	1
}	Chloroform	5.0	!	¦ U	;
1	1,2-Dichloroethane	1 5.0	!	¦ U	1
!	2-Chloroethylvinyl Ether	10.0	!	¦ U	!
}	1,1,1-Trichloroethane	5.0	!	¦ U	1
!	Carbon Tetrachloride	5.0	1	¦ U	!
!	Bromodichloromethane	1 5.0	1	l U	!
!	1,2-Dichloropropane	5.0	1	¦ U	1
1	cis-1,3-Dichloropropene	5.0	!	¦ U	1
1	Trichloroethene	5.0	1	¦ U	1
1	Dibromochloromethane	1 5.0	1	¦ U	1
!	1,1,2-Trichloroethane	1 5.0	1	¦ U	1
1	Benzene	1 5.0	!	¦ U	1
1	trans-1,3-Dichloropropene	1 5.0	1	¦ U	1
1	Bromoform	5.0	1	U	1
!	Tetrachloroethene	5.0	1	¦ U	1
1	1,1,2,2-Tetrachlorethane	1 5.0	1	¦ U	1
1	Toluene	5.0	1	¦ U	!
1	Chlorobenzene	5.0	!	ן ט	}
!	Ethylbenzene	5.0	}	¦ U	1
1	Acrolein	100.0	!	ן ט	!
1	Acrylonitrile	100.0	!	U	- !

Laboratory Name: CAMO Laboratories, Inc.

Client Name: Lawler, Matusky & Skelly Eng.

Project/Facility Name:

Sample ID: 5172-07

Date Collected: 12-11-90

Date Received: 12-12-90

Matrix: Water

Method: EPA 624 Date Reported: 1-10-91

	COMPOUND	Detection Limit (ug/L)		Sample Conc. (ug/L)	Q		
!	Chloromethane	10.0	!		יט ¦		
1	Bromomethane	10.0	ľ		¦ U	1	
ļ	Vinyl Chloride	10.0	!		ן ט	!	
	Chloroethane	10.0	!		l U	1	
l .	Methylene Chloride	5.0	!		ן ט	1	
1	Trichlorofluoromethane	5.0	l		! U		
ļ	Trans-1,2-dichloroethylene	5.0	!		¦ U	1	
1	1,1-Dichloroethene	5.0	1		U	1	
i	1,1-Dichloroethane	5.0	-		l U	!	
1	Dichlorodifluoromethane	5.0	1		ן ט	1	
1	Chloroform	5.0	ł		! U	!	
1	1,2-Dichloroethane	5.0	!		¦ U	1	
ŀ	2-Chloroethylvinyl Ether	10.0	!		¦ U	- 1	
!	1,1,1-Trichloroethane	1 5.0	1		ן ט	1	
ľ	Carbon Tetrachloride	5.0	!		¦ U	1	
1	Bromodichloromethane	1 5.0	. [		U	!	
1	1,2-Dichloropropane	1 5.0	!		; U	!	
1	cis-1,3-Dichloropropene	5.0	!		; U	1	
1	Trichloroethene	1 5.0	!		l U	1	
1	Dibromochloromethane	1 5.0	1		U	1	
1	1,1,2-Trichloroethane	5.0	!		¦ U	1	
1	Benzene	5.0	!		U	!	
!	trans-1,3-Dichloropropene	5.0	!		¦ U	1	
1	Bromoform	1 5.0	1		¦ U	1	
!	Tetrachloroethene	1 5.0	1		! U	1	
1	1,1,2,2-Tetrachlorethane	5.0	1		ן ט	1	
!	Toluene	5.0	Ì		ן ט	1	
1	Chlorobenzene	1 5.0	1		ן ט	1	
1	Ethylbenzene	5.0	1		ן ט	i	
1	Acrolein	100.0	!		ן ט	i	
1	Acrylonitrile	100.0	į		Ü	i	

Laboratory Name: CAMO Laboratories, Inc. Client Name: Lawler, Matusky & Shelly Eng. Sample ID: 5172-08 Date Collected: 12-11-00 Project/Facility Name: Sample Location: BF-18 Date Received: 12-12-90 Date Analyzed: 12-17-90 Matrix: Water Method: EPA 624

Date Reported:

1-10-91

COMPOUND		Detectic Limit (ug/L)	on	Sample Conc. (ug/L)	Q	
Chlorometh	nane	10.0	) [		ן ו	
Bromometha	ane	10.0	)		ן ט	
Vinyl Chlo	oride	10.0	)		U	İ
Chloroetha	ane	10.0	)		ן ט	i
Methylene	Chloride	5.0	)		U	i
Trichlorof	fluoromethane	1 5.0	)		¦ U	1
! Trans-1,2-	-dichloroethylene	5.0	)		U	1
l 1,1-Dichlo	oroethene	1 5.0	) !		¦ U	1
1,1-Dichlo	proethane	5.0	) !		¦ U	!
Dichlorodi	fluoromethane	1 5.0	)		'   U	- 1.
Chloroform		5.0	}		¦ U	!
1,2-Dichle		1 5.0	)		l U	!
2-Chloroet	hylvinyl Ether	10.0	1		¦ U	1
1,1,1-Tric	chloroethane	1 5.0	) [		l U	
	rachloride	5.0	1		¦ U	1
	oromethane	1 5.0	1		¦ U	1
1,2-Dichlo		5.0			¦ U	
cis-1,3-Di	.chloropropene	5.0	1		U	1
Trichloroe	thene .	5.0	1		l U	1
	oromethane	5.0	1		¦ U	1
1,1,2-Tric	hloroethane	5.0	1		¦ U	1
Benzene		5.0	•		U	1
	Dichloropropene	5.0			l U	
Bromoform		5.0	•		¦ U	!
! Tetrachlor		5.0	•		¦ U	}
	trachlorethane	5.0	•		U	!
Toluene		5.0			¦ U	1
Chlorobenz		5.0	-		U	!
Ethylbenze	ne	5.0	-		¦ U	!
Acrolein		100.0	•		U	1
Acrylonitr	ile	100.0	1		U	. !

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 5172-09 Client Mame: Lawler, Matusky & Skelly Eng. Date Collected: 12-11-90 Ploject/Facility Name: Date Received: 12-12-90 Sample Location: BF-20 Date Analyzed: 12-17-90 Matrin: Water Mathod: EPA 624 Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
Chloromethane Bromomethane	10.0	!	U
Vinyl Chloride	10.0	!	! [ ]
Chloroethane	10.0	!	U
Methylene Chloride	5.0		i u
Trichlorofluoromethane	5.0		ו ט
Trans-1,2-dichloroethylene	5.0	İ	ן ט
1,1-Dichloroethene	5.0	!	U
1,1-Dichloroethane	5.0	!	U
Dichlorodifluoromethane	5.0		'   U
Chloroform	5.0	!	U
1,2-Dichloroethane	5.0	!	U
2-Chloroethylvinyl Ether	10.0	1	U
1,1,1-Trichloroethane Carbon Tetrachloride	5.0	i	U     U
Bromodichloromethane	5.0 5.0	i L	; U ;
1,2-Dichloropropane	5.0	1 .	! U !
cis-1,3-Dichloropropene	5.0	!	ן ט ן
Trichloroethene	5.0	!	Ü
Dibromochloromethane	5.0	Ì	ו ט ו
1,1,2-Trichloroethane	5.0	Ì	ן ט ן
Benzene	5.0	1	U
trans-1,3-Dichloropropene	5.0	1	U
Bromoform	5.0	1	U
Tetrachloroethene	5.0	1	U
1,1,2,2-Tetrachlorethane	5.0	1	ן ט ן
Toluene	5.0		ן ט ן
Chlorobenzene	5.0		U
Ethylbenzene Acrolein	5.0	i	U     U
Acrolein Acrylonitrile	100.0	i !	U     U
, weighouteffie		I 	, o i

Sample ID: 5172-11 Date Collected: 12/11, 12/10/90

Laboratory Name: CAMO Laboratories, Inc.

Client Name: Lawler, Matusky & Skelly Eng.

Project/Facility Name: Date Collected:

Sample Location: SS-2

Date Analyzed: Date Received: 12-12-90

Date Analyzed: 12-18-90

Matrin: Soil Hethod: EPA 624 Date Reported: 1-10-91

COMPOUND	Detection Limit (ug/kg) as dry wt	Sample Conc. (ug/kg) as dry wt	Q	
Chloremethane	15.0	!	U	!
Bromomethane	15.0	!	¦ U	!
Vinyl Chloride	15.0	1	l U	1
Chloroethane	15.0		l U	!
Methylene Chloride	8.0	1	¦ U	!
Trichlorofluoromethane	8.0		l U	!
Trans-1,2-dichloroethylene	8.0	!	¦ U	!
1,1-Dichloroethene	8.0	!	¦ U	1
1,1-Dichloroethane	3.0	!	¦ U	!
Dichlorodifluoromethane	8.0	i	U	!
Chloroform 1,2-Dichloroethane	8.0	i	U	1
2-Chloroethylvinyl Ether	8.0	i	¦ U	i
1,1,1-Trichloroethane	15.0	i	U	i
Carbon Tetrachloride	8.0	i	¦ U	ì
Bromodichloromethane	8.0 8.0	i	¦ U	i
1,2-Dichloropropane	8.0	i	U	i
cis-1,3-Dichloropropene	8.0	i I	U   U	i
Trichloroethene	8.0	1	ן ט	1
Dibromochloromethane	8.0	!	ן ט	1
1,1,2-Trichloroethane	8.0	!	ן ט	!
Benzene	8.0	•	ן ט	!
trans-1,3-Dichloropropene	8.0	•	Ü	;
Bromoform	8.0	i	Ü	i
Tetrachloroethene	3.0	1	U	i
1,1,2,2-Tetrachlorethane	8.0	i	U	i
Toluene	8.0	Í	U	i
Chlorobenzene	8.0	Ì	U	i
Ethylbenzene	8.0	1	U	1
Acrolein	150.0	1	U	1
Acrylonitrile	150.0	1	ן ט	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-02
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: B/P - 11 Date Analyzed: 2-19-91
Matrix: Water

Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
1	Chloromethane	/	10.0	/		/	U	_ /
/	Bromomethane	/	10.0	/		1	U	1
/	<i>Vinyl Chloride</i>	/	10.0	/		1	U	1
1	Chloroethane	/	10.0	/		1	U	1
1	<i>Methylene Chloride</i>	/	5.0	/		1	U	1
/	${\it Trichlorofluoromethane}$	!	5.0	1		/	U	1
/	Trans-1,2-dichloroethylene	;	5.0	1		1	U	1
/	1,1-Dichloroethene	!	5.0	1			U	1
/	1,1-Dichloroethane	/	5.0	Ì		,	U	7
/	${\it Dichlorodifluoromethane}$	1	5.0	1		,	U	1
/	Chloroform	1	5.0	Ì	9.9	1	L;	Ì
/	1,2-Dichloroethane	1	5.0	1		1	U	1
/	2-Chloroethylvinyl Ether	1	10.0	Ì		,	U	Ì
/	1,1,1-Trichloroethane	1	5.0	1		,	U	1
/	Carbon Tetrachloride	1	5.0	,			U	ï
/	Bromodichloromethane	1	5.0	,		. !	U	,
/	1,2-Dichloropropane	1	5.0	,		;	U	7
1	cis-1,3-Dichloropropene	1	5.0	,		,	U	,
/	Trichloroethene	;	5.0	;		;	U	i
/	Dibromochloromethane	!	5.0				U	;
/	1,1,2-Trichloroethane	1	5.0	į		į	U	ï
/	Benzene	1	5.0				U	·,
/	trans-1,3-Dichloropropene	;	5.0	į		;	U	,
/	Bromoform	!	5.0	. !		,	U	7
/	Tetrachloroethene	;	5.0	7		;	U	;
/	1,1,2,2-Tetrachlorethane	!	5.0	7		;	U	7
Ì	Toluene	;	5.0	;		;	U	;
,	Chlorobenzene	′!	5.0	'!		<i>'!</i>	U	'!
!	Ethylbenzene	;	5.0	;		!	U	;
	Acrolein	′!	100.0	!		',	U	′!
7	Acrylonitrile	;	100.0	;		!	U	<i>'</i> !
/ 	Xylenes Total	′/	5.0	/		/	U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-03
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: NW - 18 Date Analyzed: 2-19-91
Matrix: Water

Matrix: Water
Method: EPA 624
Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
/	Chloromethane	/	10.0	/		/	U	/
/	Bromomethane	/	10.0	/		/	U	/
/	<i>Vinyl Chloride</i>	/	10.0	/		/	U	/
!	Chloroethane	!	10.0	/	130	/		!
/	<i>Methylene Chloride</i>	/	5.0	/		/	U	/
/	Trichlorofluoromethane	/	5.0	/		1	U	/
/	Trans-1,2-dichloroethylene	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethene</i>	/	5.0	/		/	U	/
<i>;</i>	1,1-Dichloroethane	!	5.0	/	120	/		/
/	Dichlorodifluoromethane	/	5.0	1		/	U	/
/	Chloroform	/	5.0	/		/	U	/
<i>!</i>	<i>1,2-Dichloroethane</i>	ľ	5.0	1	5	/		1
/	2-Chloroethylvinyl Ether	/	10.0	1		/	U	/
/	<i>1,1,1-Trichloroethane</i>	/	5.0	/		/	U	1
/	Carbon Tetrachloride	/	5.0	/		/	U	/
/	${\it Bromodichloromethane}$	/	5.0	/		/	U	/
/	<i>1,2-Dichloropropane</i>	/	5.0	/		/	U	/
/	cis-1,3-Dichloropropene	/	5.0	/		/	U	!
/	Trichloroethene	/	5.0	/		/	U	1
/	Dibromochloromethane	1	5.0	1	~÷ 1 1	1	U	1
/	1,1,2-Trichloroethane	/	5.0	1		1	U	1
/	Benzene	/	5.0	1		1	U	/
<i>;</i>	trans-1,3-Dichloropropene	/	5.0	/		/	U	1
<i>!</i>	Bromoform	/	5.0	/		/	U	!
/	Tetrachloroethene	/	5.0	/		/	<u>Į</u> Į	/
/	1,1,2,2-Tetrachlorethane	/	5.0	/		/	U	<i>!</i>
/	Toluene	!	5.0	1		;	U	/
/	Chlorobenzene	/	5.0	1		1	U	1
/	Ethylbenzene	/	5.0	1		!	U	1
1	Acrolein	′	100.0	1		/	U	/
/	Acrylonitrile	/	100.0	1		,	U	1
/	Xylenes Total	/	5.0	. /			U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-04
Client Name: Lawler, Natusky & Skelly Engineers Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: MW - 18 - Sampled with pump Date Analyzed: 2-19-91
Matrix: Water
Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
1	Chloromethane	;	10.0			 /	U	
/	Bromomethane -	/	10.0	1			U	1
/	Vinyl Chloride	1	10.0	,		,	U	,
1	Chloroethane	/	10.0	1	160	1		1
<i>;</i>	Methylene Chloride	1	5.0	/		1	U	1
/	Trichlorofluoromethane	!	5.0	/		1	U	1
/	Trans-1,2-dichloroethylene	/	5.0	1		,	U	1
/	1,1-Dichloroethene	/	5.0	1		1	U	1
/	1,1-Dichloroethane	/	5.0	/	140	1		1
/	${\it Dichlorodifluoromethane}$	/	5.0	/		1	U	1
/	Chloroform	/	5.0	Ì		Ì	U	7
/	1,2-Dichloroethane	/	5.0	1	6	1		1
/	2-Chloroethylvinyl Ether	/	10.0	1		Ì	U	1
/	1,1,1-Trichloroethane	1	5.0	1		,	U	1
/	Carbon Tetrachloride	/	5.0	1		,	U	,
/	Bromodichloromethane	1	5.0	1		,	U	,
/	1,2-Dichloropropane	/	5.0	Ì		Ì	U	Ì
/	cis-1,3-Dichloropropene	/	5.0	1		1	U	1
/	Trichloroethene	1	5.0	Ì		i	U	7
/	Dibromochloromethane	1	5.0	1		,	U	1
/	1,1,2-Trichloroethane	1	5.0	,			U	,
/	Benzene	1	5.0	1		1	U	1
/	trans-1,3-Dichloropropene	1	5.0	1		1	U	1
/	Bromoform	1	5.0	1		1	U	1
!	Tetrachloroethene	/	5.0	1		1	U	1
/ -	1,1,2,2-Tetrachlorethane	1	5.0	1		1	U	1
/	Toluene	!	5.0	1		1	IJ	1
/	Chlorobenzene	1	5.0	1		1	U	1
/	Ethylbenzene	;	5.0	,		ij	U	;
/	Acrolein	1	100.0	1		1	U	1
/	Acrylonitrile	;	100.0	į		į	U	1
/	Xylenes Total	/	5.0	!			U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-05
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: MW - 20 Date Analyzed: 2-19-91
Matrix: Water
Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)	Q	· ·
/	Chloromethane	/	10.0			: ! U	!
/	Bromomethane	/	10.0	1		! U	,
/	<i>Vinyl Chloride</i>	/	10.0	1		, U	į
/	Chloroethane	/	10.0	1		, ! U	1
<i>;</i> .	Hethylene Chloride	/	5.0	Ì		, , U	;
/	Trichlorofluoromethane	/	5.0	1		; U	7
/	Trans-1,2-dichloroethylene	/	5.0	1		, U	,
/	1,1-Dichloroethene	/	5.0	1		, U	,
/	<i>1,1-Dichloroethane</i>	/	5.0	1	£6	Ì	j
/	${\it Dichlorodifluoromethane}$	1	5.0	./	ž. j	, U	1
/	Chloroform	7	5.0	58/		, U	1
/	<i>1,2-Dichloroethane</i>	′	5.0	1		/ U	1
/	2-Chloroethylvinyl Ether	/	10.0	/		, U	1
/	<i>1,1,1-Trichloroethane</i>	/	5.0	/		/ U	1
,	Carbon Tetrachloride	/	5.0	/		; U	/
/	Bromodichloromethane	/	5.0	/		, U	/
/	1,2-Dichloropropane	/	5.0	/		, U	1
/	cis-1,3-Dichloropropene	/	5.0	1		/ U	1
/	Trichloroethene	/	5.0	/		; U	1
/	Dibromochloromethane .	/	5.0	/		/ - U	1
/	<i>1,1,2-Trichloroethane</i>	/	5.0	/		, U	1
/	Benzene	/	5.0	i		; U	/
/	trans-1,3-Dichloropropene	/	5.0	/		; U	/
1	Bromoform	/	5.0	/		¦ U	/
/	<i>Tetrachloroethene</i>	/	5.0	/		; U	/
/	1,1,2,2-Tetrachlorethane	/	5.0	/		; U	/
/	Toluene	/	5.0	/		; U	/
/	Chlorobenzene	1	5.0	/		; U	1
/	Ethylbenzene	/	5.0	/		, U	/
<i>'</i>	Acrolein	/	100.0	/		U	1
1	Acrylonitrile	/	100.0	/		, U	/
/	Xylenes Total	1	5.0	/		; U	/

- 20

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-06
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-12-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: MW - 22 Date Analyzed: 2-19-91

Matrix: Water
Method: EPA 624

Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	_
/	Chloromethane	′	10.0	1		/	U	_
/	Bromomethane	/	10.0	1		/	$U_{.}$	1
/	Vinyl Chloride	/	10.0	/		/	U	/
!	Chloroethane	/	10.0	1		/	U	1
/	<i>Methylene Chloride</i>	/	5.0	/		/	U	/
/	${\it Trichlorofluoromethane}$	/	5.0	1		/	U	1
/	Trans-1,2-dichloroethylene	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethene</i>	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethane</i>	/	5.0	/	19	/		/
/ -	${\it Dichlorodifluoromethane}$	/	5.0	/	*	/	U	1
<i>[</i>	Chloroform	/	5.0	/		1	U	1
.'	1,2-Dichloroethane	/	5.0	1		1	U	1
/	2-Chloroethylvinyl Ether	/	10.0	/		1	U	1
1	1,1,1-Trichloroethane	/	5.0	/	52	1		1
/	Carbon Tetrachloride	/	5.0	1		1	U	1
/	Bromodichloromethane	/	5.0	/		/	U	1
/	<i>1,2-Dichloropropane</i>	/	5.0	/		1	U	1
/	cis-1,3-Dichloropropene	/	5.0	1		1	U	1
/	Trichloroethene	/	5.0	1		Ì	U	1
/	Dibromochloromethane	1	5.0	1		1	U	1
/	1,1,2-Trichloroethane	1	5.0	Ì		Ì	U	,
/	Benzene	1	5.0	1		1	U	1
/	trans-1,3-Dichloropropene	/	5.0	1		,	U	/
/	Bromoform	!	5.0	/		/	U	/
/	Tetrachloroethene	/	5.0	1		1	U	,
/	1,1,2,2-Tetrachlorethane	1	5.0			7	U	,
/	Toluene	,	5.0	7		,	U	;
/	Chlorobenzene	1	5.0	<i>'</i> !		1	U	•
/	Ethylbenzene	1	5.0	;		;	U	7
/	Acrolein	,	100.0	7		'!	U	7
1	Acrylonitrile	;	100.0	;		;	U	7
/	Xylenes Total	1	5.0	1		/	U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-07
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 3 Date Analyzed: 2-19-91

Matrix: Water Method: EPA 624

Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	_
/	Chloromethane	/	10.0	/		/	U	/
/	Bromomethane	/	10.0	;		1	U	/
/	<i>Vinyl Chloride</i>	/	10.0	/		/	U	/
/	Chloroethane	/	10.0	/		!	U	/
/	<i>Methylene Chloride</i>	/	5.0	/		/	U	/
/	Trichlox of luoromethane	/	5.0	/		/	U	/
/	Trans-1,2-dichloroethylene	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethene</i>	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethane</i>	/	5.0	/		/	U	/
/	Dichlorodifluoromethane	1	5.0	. 1	8° 4	/	U	/
/	Chloroform	/	5.0	/		/	U	/
/	<i>1,2-Dichloroethane</i>	/	F. O	/		/	U	/
/	2-Chloroethylvinyl Ether	/	10.0	/		/	U	/
/	<i>1,1,1-Trichloroethane</i>	/	5.0	/		/	U	1
/	Carbon Tetrachloride	/	5.0	,		/	U	/
/	Bromodichloromethane	/	5.0	/		/	U	/
/	<i>1,2-Dichloropropane</i>	/	5.0	/		/	U	/
/	cis-1,3-Dichloropropene	/	5.0	/		/	U	/
/	Trichloroethene	/	5.0	1		/	U	/
/	Dibromochloromethane	/	5.0	/	•	/	U	/
/	<i>1,1,2-Trichloroethane</i>	/	5.0	/		/	U	/
/	Benzene	!	5.0	/		/	U	1
/	trans-1,3-Dichloropropene	/	5.0	,		/	IJ	<i>!</i>
/	Bromoform	!	5.0	/		/	U	/
/	<i>Tetrachloroethene</i>	!	5.0	/		/	U	/
/	1,1,2,2-Tetrachlorethane	/	5.0	/		/	IJ	/
/	Toluene	/	5.0	/		/	U	/
/	Chlorobenzene	/	5.0	/		1	U	/
/	Ethylbenzene	/	5.0	/		/	U	/
/	Acrolein	/	100.0	1		/	U	/
/	Acrýlonitrile	/	100.0	/		1	U	/
!	Xylenes Total	′	5.0	1		/	U	/

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-08
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 5 Date Analyzed: 2-19-91
Matrix: Water

Method: EPA 624

Date Reported: 3-4-91

	СОМРОИНД		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
1	Chloromethane	/	10.0	/		/	U	/
/	Bromomethane	1	10.0	/		1	U	/
1	<i>Vinyl Chloride</i>	/	10.0	/		/	U	/
1	Chloroethane	/	10.0	/		1	U	!
/	<i>Methylene Chloride</i>	/	5.0	/		/	U	/
/	Trichlorofluoromethane	/	5.0	/		1	U	1
/	Trans-1,2-dichloroethylene	1	5.0	/		/	U	/
/	1,1-Dichloroethene	/	5.0	/		/	U	1
/	<i>1,1-Dichloroethane</i>	/	5.0	/		/	U	/
/	${\it Dichlorodifluoromethane}$	/	5.0	/		1	U	/
/	Chloroform	/	5.0	1		/	U	/
/	<i>1,2-Dichloroethane</i>	/	5.0	/		1	U	/
/	2-Chloroethylvinyl Ether	/	10.0	1		/	U	/
1	<i>1,1,1-Trichloroethane</i>	/	5.0	1		1	U	/
/	Carbon Tetrachloride	/	5.0	1		/	U	;
/	Bromodichloromethane	/	5.0	/		/	U	/
/	<i>1,2-Dichloropropane</i>	/	5.0	1		/	U	!
/	cis-1,3-Dichloropropene	/	5.0	/		1	U	1
/	Trichloroethene	/	5.0	1		/	U	/
/	Dibromochloromethane	!	5.0	/		1	U	/
/	1,1,2-Trichloroethane	/	5.0	/		/	U	1
<i>;</i>	Benzene	/	5.0	/		!	U	1
1	trans-1,3-Dichloropropene	/	5.0	/		/	U	/
1	Bromoform	/	5.0	/		!	U	1
/	Tetrachloroethene	;	5.0	1		/	U	/
!	1,1,2,2-Tetrachlor+thane	!	5.0	1		/	U	/
!	Toluene	/	5.0	!		/	U	/
!	Chlorobenzene	′	5.0	/		1	U	1
<i>!</i>	Ethylbenzene	!	5.0	1		1	U	1
1	Acrolein	1	100.0	1		1	U	1
/	Acrylonitrile	/	100.0	Ì			IJ	1
1	Xylenes Total	1	5.0	1		,	U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-09
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 6 Date Analyzed: 2-19-91
Matrix: Water

Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	_
1	Chloromethane	/	10.0	/		/	U	- /
/	Bromomethane	1	10.0	/		1	U	1
/	<i>Vinyl Chloride</i>	/	10.0	/		/	U	/
!	Chloroethane	!	. 10.0	1		!	ŢĪ	!
/	<i>Methylene Chloride</i>	/	5.0	/		/	U	/
/	${\it Trichlorofluoromethane}$	/	5.0	/		1	U	1
/	Trans-1,2-dichloroethylene	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethene</i>	/	5.0	/		/	U	/
/	1,1-Dichloroethane	!	5.0	/		/	U	/
/	${\it Dichlorodifluoromethane}$	/	5.0	/	`	/	U	/
/	Chloroform	!	5.0	/		,	U	/
/	<i>1,2-Dichloroethane</i>	/	5.0	!		1	<u>Į</u> J	1
/	2-Chloroethylvinyl Ether	/	10.0	/		/	U	/
. /	<i>1,1,1-Trichloroethane</i>	/	5.0	/		1	U	/
/	Carhon Tetrachloride	/	5.0	/		/	U	/
/	Bromodichloromethane	/	5.0	/		1	U	/
/	<i>1,2-Dichloropropane</i>	/	5.0	/		/	U	/
/	cis-1,3-Dichloropropene	/	5.0	/		/	U	/
/	Trichloroethene	/	5.0	/		/	U	/
/	Dibromochloromethane	/	5.0	/		/	U	/
/	<i>1,1,2-Trichloroethane</i>	/	5.0	/		/	U	/
/	Benzene	!	5.0	/		1	U	1
/	trans-1,3-Dichloropropene	!	5.0	/		/	U	/
/	Bromoform	!	5.0	!		/	U	/
/	<i>Tetrachloroeth=ne</i>	!	5.0	/		!	U	/
/	1,1,2,2-Tetrachlorethane	!	5.0	1		/	U	1
!	Toluene	/	5.0	1		1	U	1
/	Chlorobenzene	!	5.0	/		1	U	1
/	Ethylbenzene	/	5.0	7		1	U	1
/	Acrolein	/	100.0	1		1	U	1
/	Acrylonitrile	/	100.0			,	U	1
/	Xylenes Total	!	5.0	1		1	U	,

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-10
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 7 Date Analyzed: 2-19-91

Matrix: Water

Method: EPA 624 Date Reported: 3-4-91

_	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	_
/	Chloromethane	/	10.0	1		/	U	/
/	Bromomethane	/	10.0	/		/	U	1
/	<i>Vinyl Chloride</i>	;	10.0	/		/	U	<i>!</i>
!	Chloroethane	!	10.0	/		/	U	!
/	<i>Methylene Chloride</i>	;	5.0	/		/	U	/
/	${\it Trichlorofluoromethane}$	/	5.0	/		/	U	/
/	Trans-1,2-dichloroethylene	;	5.0	/		/	U	;
/	1,1-Dichloroethene	/	5.0	/		/	U	/
/	<i>1,1-Dichloroethane</i>	/	5.0	/		/	U	/
/	${\it Dichlorodifluoromethane}$	/	5.0	/		/	U	/
/	Chloroform	/	5.0	/	.,*	/	U	/
i	<i>1,2-Dichloroethane</i>	/	5.0	/		/	U	1
/	2-Chloroethylvinyl Ether	;	10.0	/		/	U	/
/	<i>1,1,1-Trichloroethane</i>	!	5.0	/		/	U	/
/	Carbon Tetrachloride	/	5.0	/		;	U	/
/	Bromodichloromethane	/	5.0	/		/	IJ	/
/	<i>1,2-Dichloropropane</i>	/	5.0	/		/	U	/
/	cis-1,3-Dichloropropene	/	5.0	/		1	U	/
/	Trichloroethene	/	5.0	/		/	U	/
/	Dibromochloromethane	/	5.0	/	3	1	U	1
1	1,1,2-Trichloroethane	!	5.0	/		/	U	/
1	Benzene	!	5.0	1		1	U	1
/	trans-1,3-Dichloropropene	1	5.0	1		/	U	/
1	Bromoform	1	5.0	1		1	U	1
/	Tetrachloroethene	1	5.0	1		/	U	;
/	1,1,2,2-Tetrachiorethane	!	5.0	1		1	U	1
1	Toluene	,	5.0	1		!	U	1
/	Chlorobenzene	!	5.0	,		1	U	. /
/	Ethylbenzene	1	5.0	;		1	U	!
/	Acrolein	1	100.0	Ì		1	U	1
1	Acrylonitrile	;	100.0	;		,	U	1
! _	Xylenes Total	!	5.0	/ 		/	<i>I.I</i> 	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-11
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-7-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 8 Date Analyzed: 2-19-91
Matrix: Water
Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
1	Chloromethane	/	1000.0	/			   U	- /
/	Bromomethane	/	1000.0	/			, U	1
/	<i>Vinyl Chloride</i>	/	1000.0	/			, U	1
/	Chloroethane	/	1000.0	/			, U	1
j	<i>Methylene Chloride</i>	/	500.0	/			, U	1
1	Trichlorofluoromethane	/	500.0	/			! U	1
/	Trans-1,2-dichloroethylene	/	500.0	1			! U	,
/	<i>1,1-Dichloroethene</i>	/	500.0	/			; U	1
/	<i>1,1-Dichloroethane</i>	/	500.0	/	720		' D	,
/	${\it Dichlorodifluoromethane}$	/	500.0	1			! U	!
<i>;</i>	Chloroform	/	500.0	1			! U	,
/	<i>1,2-Dichloroethane</i>	/	500 O	1			! U	1
/	2-Chloroethylvinyl Ether	/	1000.0	1			ł U	,
/	1,1,1-Trichloroethane	/	500.0	1	12000		¦ D	1
/	Carbon Tetrachloride	/	500.0	/			! U	/
/	Bromodichloromethane	/	500.0	1			<i>! U</i>	,
/	<i>1,2-Dichloropropane</i>	1	500.0	1			! U	,
/	cis-1,3-Dichloropropene	/	500.0	/			! U	1
/	Trichloroethene	/	500.0	/			! U	1
/	Dibromochloromethane	/	500.0	1			! U	1
/	<i>1,1,2-Trichloroethane</i>	/	500.0	1			! U	,
/	Benzene	/	500.0	/			! U	1
/	trans-1,3-Dichloropropene	/	500.0	/		,	' U	1
/	Bromoform	!	500.0	1			' U	1
/	<i>Tetrachloroethene</i>	/	500.0	1		,	U	1
/	1,1,2,2-Tetrachlorethane	/	500.0	,		,	! []	!
/	Toluene	/	500.0	1	1000	,	D	,
/	Chlorobenzene	/	500.0	,		,	U	1
/	Ethylbenzene	/	500.0	,	650	;	' D	,
/	Acrolein	/	100000.0	,		,	Ü	′!
/	Acrylonitrile	/	100000.0	;		,	U	;
/	Xylenes Total	1	500.0	,	3500	;	D	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-12
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-7-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: W.S. # 9 Date Analyzed: 2-19-91
Matrix: Water

Method: EPA 624 Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
/	Chloromethane	;	10.0				U	-/
/	Bromomethane	1	10.0	/		1	U	1
/	Yinyl Chloride	/	10.0	/		/	U	/
. !	Chloroethane	/	10.0	/		/	U	/
/	<i>Methylene Chloride</i>	/	5.0	1		/	U	/
/	Trichlorofluoromethane	/	5.0	/		1	U	1
/	Trans-1,2-dichloroethylene	/	5.0	/		/	U	/
1	<i>1,1-Dichloroethene</i>	/	5.0	1		1	U	1
/	<i>1,1-Dichloroethane</i>	/	5.0	/		1	U	1
/	Dichlorodifluoromethane	1	5.0	1		1	U	1
/	Chloroform	/	5.0	/		1	U	1
!	<i>1,2-Dichloroethane</i>	/	5.0	1		1	U	1
/	2-Chloroethylvinyl Ether	/	10.0	/		1	U	1
/	1,1,1-Trichloroethane	/	5.0	1		1	U	1
/	Carbon Tetrachloride	/	5.0	/		1	U	1
/	Bromodichloromethane	/	5.0	/		1	U	1
1	1,2-Dichloropropane	/	5.0	1		1	U	1
/	cis-1,3-Dichloropropene	1	5.0	/		1	U	1
/	Trichloroethene	/	5.0	/		1	U	1
/	Dibromochloromethane	/	5.0	$r_{\tilde{I}}$		1	U	1
/	1,1,2-Trichloroethane	/	5.0	1		1	U	1
/	Benzene	/	5.0	/		1	U	1
/	trans-1,3-Dichloropropene	;	5.0	1		1	U	Ì
/	Bromoform	!	5.0	1		1	U	1
!	Tetrachloroethene	/	5.0	/		1	U	1
/	1,1,2,2-Tetrachlorethane	/	5.0	1		1	U	!
/	Toluene	/	5.0	1		;	IJ	1
/	Chlorobenzene	1	5.0	1		1	U	1
/	Ethylbenzene	/	5.0	Ì		Ì	U	1
/	Acrolein	1	100.0	1		,	U	1
/	Acrylonitrile	/	100.0	,		j	U	,
/	Xylenes Total	/	5.0			. /	U	1

Laboratory Name: CANO Laboratories, Inc.

Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005)

Sample Location: SS # 1

Matrix: Soil

Method: EPA 624

Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/kg)*		Sample Conc. (ug/kg)*		Q	
1	Chloromethane	/	12.0			/	U	_
/	Bromomethane	/	12.0	/		/	U	/
/	<i>Vinyl Chloride</i>	/	12.0	/		1	U	/
/	Chloroethane	/	12.0	/		,	U	1
1	Methylene Chloride	/	5.8	/		/	U	/
/	Trichlorofluoromethane	/	5.8	/		/	U	1
/	Trans-1,2-dichloroethylene	/	5.8	/		/	U	/
/	<i>1,1-Dichloroethene</i>	1	5.8	/		/	U	1
/	1,1-Dichloroethane	/	5.8	/		/	U	1
/	${\it Dichlorodifluoromethane}$	/	5.8	/		/	U	1
/	Ciloroform	/	5.8	/		/	U	i
/	1,2-Dichloroethane	!	5.8	/		/	$\mathcal{U}$	/
/	<i>2-Chloroethylvinyl Ether</i>	/	12.0	/		/	U	/
/	<i>1,1,1-Trichloroethane</i>	/	5.8	/		/	U	1
/	Carbon Tetrachloride	/	5.8	/		/	U	/
/	Bromodichloromethane	1	5.8	/		/	U	/
/	1,2-Dichloropropane	/	5.8	/		/	U	/
/	cis-1,3-Dichloropropene	/	5.8	1		/	U	1
/	Trichloroethene	/	5.8	/		1	U	1
/	Dibromochloromethane	/	5.8	1		1	U	1
/	<i>1,1,2-Trichloroethane</i>	/	5.8	/		1	U	1
/	Benzene	!	5.8	1		1	U	1
/	trans-1,3-Dichloropropene	/	5.8	/		/	U	/
<i>!</i>	Bromoform	1	5.8	/		/	IJ	/
/	Tetrachloroethene	!	5.8	/		/	IJ	1
/	1,1,2,2-Tetrachlorethane	/	5.8	/		1	U	/
/	Toluene	/	5.8	/		/	U	1
/	Chlorobenzene	/	5.8	1		1	U	1
/	Ethylbenzene	/	5.8	1		1	U	Ì
/	Acrolein	/	120.0	1		1	U	1
/	Acrylonitrile	/	120.0	7		,	U	1
/	Xylenes Total	1	.5.8	,		!	U	7

^{*} All results expressed as dry wt. unless otherwise noted.

Laboratory Name: CANO Laboratories, Inc. Sample ID: 0722-14
Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91
Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01
Sample Location: SS # 2 Date Analyzed: 2-20-91
Matrix: Soil

Matrix: Soil
Method: EPA 624
Date Reported: 3-4-91

	COMPOUND		Detection Limit (ug/kg)*		Sample Conc. (ug/kg)*		Q	_
/	Chloromethane	/	12.0	/		/	U	/
/	Bromomethane	1	12.0	/		!	U	/
/	<i>Vinyl Chloride</i>	/	12.0	/		/	U	/
/	Chloroethane	!	12.0	!		1	U	1
/	<i>Methylene Chloride</i>	/	5.8	/		/	U	/
/	Trichlorofluoromethane	/	5.8	/		1	U	/
/	Trans-1,2-dichloroethylene	1.	5.8	/		/	U	/
/	<i>1,1-Dichloroethene</i>	′	5.8	/		/	U	/
/	1,1-Dichloroethane	,/ ;	5.8	1		;	U	/
/	Dichlorodifluoromethane	/	5.8	/	ş	/	U	1
/	Chloroform	/	5.8	/		1	U	1
/	<i>1,2-Dichloroethane</i>	/	5.8	/		/	U	/
/	2-Chloroethylvinyl Ether	/	12.0	/		/	U	1
/	1,1,1-Trichloroethane	/	5.8	/		1	U	/
/	Carbon Tetrachloride	/	5.8	/		/	U	/
/	Bromodichloromethane	!	5.8	/		/	U	/
/	1,2-Dichloropropane	!	5.8	/		/	U	/
1	cis-1,3-Dichloropropene	/	5.8	/	-	/	U	1
/	Trichloroethene	1	5.8	1		1	U	1
/	Dibromochloromethane	1	5.8	1	34.	1	U	1
/	1,1,2-Trichloroethane	1	5.8	1		1	U	1
/	Benzene	1	5.8	1		1	U	1
/	trans-1,3-Dichloropropene	/	5.8	1		,	U	1
/	Bromoform	,	5.8	1		1	U	1
/	Tetrachloroethene	!	5.8	,		,	U	,
/	1,1,2,2-Tetrachlorethane	,	5.8	,		,	U	,
1	Toluene	,	5.8	7		- 7	U	ï
/	Chlorobenzene	;	5.8	7			U	;
1	Ethylbenzene	;	5.8	7		;	U	7
1	Acrolein	,	120.0	,		,	U	,
Ï	Acrylonitrile	,	120.0	;		;	U	;
!	Xylenes Total	/	5.8	1		/	U	1

^{*} All results expressed as dry wt. unless otherwise noted.

Date Reported:

3-4-91

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0722-15 Client Name: Lawler, Matusky & Skelly Engineers Date Collected: 2-8-91 Project/Facility Name: Bergstol (535-005) Date Received: 2-14-01 Sample Location: SS # 3 Date Analyzed: 2-20-91 Matrix: Soil Method: EPA 624

	COMPOUND		Detection Limit (ug/kg)*		Sample Conc. (ug/kg)*		Q	
1	Chloromethane	/	12.0	/		 /	U	- /
/	Bromomethane	1	12.0	1		1	U	1
/	<i>Vinyl Chloride</i>	/	12.0	/		/	U	1
/	Chloroethane	1	12.0	1		/	U	1
i.	<i>Nethylene Chloride</i>	/	6.0	/		/	U	1
/	${\it Trichlorofluoromethane}$	/	6.0	/		1	U	/
/	Trans-1,2-dichloroethylene	/	6.0	/		/	U	/
<i>!</i>	1,1-Dichloroethene	′	6.0	/		/	U	1
<i>'</i> .	1,1-Dichloroethane	/	6.0	/		/	U	/
1	Dichlorodifluoromethane	/	6.0	/		/	U	1
<i>'</i> ,	Chloroform	/	6.0	/	7	/		/
i,	1,2-Dichloroethane	1	6.0	/		/	U	/
<i>'</i> ,	2-Chloroethylvinyl Ether	/	12.0	/		/	U	/
<i>'</i> .	1,1,1-Trichloroethane	′	6.0	1	8	/		/
/	Carbon Tetrachloride	/	6.0	/		/	U	/
/	Bromodichloromethane	′	6.0	/		/	U	/
/	<i>1,2-Dichloropropane</i>	/	6.0	/		/	U	/
/	cis-1,3-Dichloropropene	/	6.0	1		/	U	/
/	Trichloroethene	/	6.0	/		/	U	/
/	Dibromochloromethane	/	6.0	/		/	U	/
/	1,1,2-Trichloroethane	/	6.0	/		/	U	1
/	Benzene	/	6.0	/		/	U	1
/	trans-1,3-Dichloropropene	/	6.0	/		/	U	/
/	Bromoform	′	6.0	/		/	U	/
/	Tetrachloroethene	/	6.0	/		/	U	1
/	1,1,2,2-Tetrachlorethane	/	6.0	/		/	U	1
/	Toluene	/	6.0	/		/	U	1
/	Chlorobenzene	/	6.0	/		/	U	1
/	Ethylbenzene	/	6.0	/		1	U	1
/	Acrolein	/	120.0	1		/	U	1
/	Acrylonitrile	!	120.0	/		1	U	,
1	Xylenes Total	<i>!</i>	6.0	1		/	U	1

^{*} All results expressed as dry wt. unless otherwise noted.

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET -BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CANO Laboratories. Inc.

Client Wame: Lawler. Watusky & Skelly Engineers

Project/Facility Name: Bergstol (535-005)

Sample Location: NW - 18

Natrix: Water Nethod: EPA 625 

 Sample ID:
 0722-03

 Date Collected:
 2/12/91

 Date Received:
 2/14/91

 Date Extracted:
 2/22/91

 Date Analyzed:
 2/28/91

 Date Reported:
 3/4/91

			Detectio Limit	ï	Sample			
	COMPOUND		iug/L		Conc. (ug/L)		Ç	
i	bis(2-Chioroethyi/ ether		10.0	 /		1	U ;	
;	1.j-Dichlorobenzene	′	10.0	;		/	U /	
!	1,4-Dichlorobenzene	!	10.0	!		!	U /	
,1	<i>Benzidine</i>	!	40.0	!		!	U /	
!	1,2-Dichlorobenzene	/	10.0	!		1	U !	
!	1.2-Diphenylhydrazine	!	10.0	/		/	U ;	
!	bis(2-Chioroisopropy1) ether	/	10.0	1		!	U ¦	
	N-Nitrosodimethylamine	1	10.0	/		/	U !	
!	N-Nitroso-di-m-propylamine	/	10.0	!		/	U ¦	
;	<i>Hexachloroethane</i>	!	10.0	/		!	U !	
!	Nitrobenzene	!	10.0	!		!	U!	
1	Isophorone	!	10.0	!		!	IJ;	
1	bis(2-Chloroethoxy) methane	!	10.0	!		/	U !	
!	1.2,4-Trichlorobenzene	."	13.0	!			U !	
!	Kaphthalene	!	16.6	!	14	/	1	
1	Hexachlorobutadiene	,	16.6	;		!	v !	
!	<i>Hexachlorocyclopentadiene</i>	,	10.0	,			U !	
!	2-Chioronaphthalene	!	10.0	/		!	U ;	
!	Dimethylphthalate	,	10.0				ij!	
,	Acemapthtylene		11.0	,			<i>" !</i>	
,	2.6-Dimitrotolyene	•	11.1	٠			.,	
	Hexachlorobenzene						::	
	Aucenaphthene	!			• •			
	2.4-Dimitrotoluene	•	10.0	,	• •	,	ij !	
	Biethylphthalate		10.0	;			; ;;	
	4-Chiorophenyi-phenyiether	:	11.1	<i>'</i> .			;; ;	
d	Fluorene		16.0		::		!	
	W-Witrosodiphenylamine (1)	!	10.0	,	10		,	
		ě	10.0		10			

	CONPOUND		Detection Limit (ug/L)	о <u>п</u>	Sample Conc. (ug/L:		Q	
<i>;</i>	4-Bromophenyl-phenylether	;	10.0	/		/	U	!
,	Phenanthrene	/	10.0	/	33	;		!
;	Anthracene	!	10.0	/	13	;		!
!	Di-n-butylphthalate	!	10.0	!		!	"	!
!	Fluoranthene	/	10.0	;	120	!		;
/	Pyrene	!	10.0	!	130	!		;
/	Butylbenzylphthalate	/	10.0	/		/	Ü	!
!	3,3'-Dichlorobenzidine	!	20.0	!		!	ţţ	!
/	Benzo(a)anthracene	/	10.0	/	85	/		!
!	Chrysene	!	10.0	!	64	!		!
!	bis/2-Ethylhexyll phthalate	!	10.0	1		!	ľ	!
!	Di-m-octylphthalate	!	10.0	1		/	U	;
1	Benzo(b)fluoranthene	/	10.0	/	62	,		!
!	Benzo(k)fluoranthene	!	10.0	!	55	,		ļ
!	Benzo(a) pyrene	/	10.0	/	54	!		!
/	Indeno(1,2,3-cd)pyrene	!	10.0	!	25	!		!
!	Dibenz(a,h)anthracene	!	10.0	/		1	U	!
,	Benzolg,h,ilperylene	!	10.0	,	25	,		!

#### SENIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/KEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc. Client Name: Lawler, Matusky & Skelly Engineers

/ N-Nitroscdiphenylamine (1) / 10.0 /

Project/Facility Name: Bergstol (535-005) Sample Location: NW - 18 Sampled with pump

Natrix: Water Method: EPA 625

Sample ID: 0722-04 Date Collected: 02/12/91 Date Received: 2/14/91 Date Extracted: 2/22/91 Date Analyzed: 2/28/91 Date Reported: 3/4/91

101 ! # ! 101 ! " !

101 ; 0 ! ! " ! ! " ! 1 0 1 ! " ! ! " ! ; U; 1 0 1 1 0 1 / U /

	COMPOUND		Detection Limit (ug/L)	on 	Sample Conc. (ug/L)		Q			COMPOUND		Detection Limit (ug/L)	Sample Conc. (ug/L)
;	bis(2-Chloroethyl) ether	/	10.0	/		/	U	/	1	4-Bromopheny	l-phenylether ;	10.0 /	
;	1.3-Dichlorobenzene	/	10.0	/		/	U	/	1	Phenanthrene	!	10.0 /	
<i>¦</i>	1.4-Dichlorobenzene	1	10.0	,		/	U	1	1	Anthracene	, , ,	10.0	
/	<i>Benzidine</i>	/	40.0	/		/	IJ	1	,	Di-n-butylph	thalata i	10.0 /	
;	1,2-Dichlorobenzene	,	10.0	/		1			!	Fluoranthene	indiace ,	10.0	15
/	1,2-Diphenylhydrazine	!	10.0	1		/		-	,	Pyrene	,	10.0	18
!	bis(2-Chioroisopropyl) ether	/	10.0	1			U	•	1	Butylbenzylph	hthalate !	10.0	.18
/	<i>N-Nitrosodimethylamine</i>	!	10.0	1		1			',	3, J'-Dichlord		20.0	
!	N-Nitroso-di-n-propylamine	!	10.0	!		;			. ',	Benzo(a)anthi	,	10.0	
!	Hexachloroethane	!	10.0	!			U		΄,	Chrysene	acene ;	10.0 ;	
;	<i>Kitrobenzene</i>	,	10.0	1		,		•	,				4, 4
!	Isophorone	;	10.0	7		;			',	Dista-activitie	exyl) phthalate !	10.0 4	
!	bis(2-Chloroethoxy) methane	!	10.0	,		-/			',	Di-n-octylpht Benzo(b)fluor		10.0 /	
!	1,2,4-Trichlorobenzene	<i>'</i> !	10.0	,			IJ		;			10.0 /	
/	Waphthalene	<i>'</i>	10.0	,			U		i	Benzo(k)fluor		10.0 !	
1	Hexachlorobutadiene	<u>'</u>	10.0	',			U		<i>i</i> , .	Benzo(a)pyren		10.0 /	
1	Hexachiorocyclopentadiene	,	10.0	',		1 6			i	Indeno(1,2,3-		10.0 /	
1	2-Chloronaphthalene	!	10.0	',		1 6			i	Dibenz(a,h)an		10.0 /	
!	Dimethylphthalate	<u>'</u>	10.0	',	, .	11			i	Benzo(g,h,i)p	erylene !	10.0 /	
/	Acenapthtylene	,	10.0	',			u U						
,	2.6-Dimitrotoluene	,	10.0	',		: 1							<b>.</b>
	Hexachlorobenzene	,	10.0	:		, ,							
,	Ancemaphthene	1	10.0	,			,						
:	2.4-Dimitrotoluene	,	10.0	,				,					
	Diethylphthalate	,	10.0	,		, ,		,					
•	4-Chlorophenyl-phenylether	,	10.0	,		! !						5. M. J. J. J. J. J. J. J. J. J. J. J. J. J.	
,	Fluorese	,		,		<i>' i</i>							
΄,	H With a series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series		10.0	í		: 0	/ /	•					

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET SASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc. Client Name: Lawler, Natusky & Skelly Engineers

Project/Facility Name: Bergstol (535-005)

Sample Location: SS # 2

Matrix: Soil Method: EPA 625 

 Sample ID:
 0722-14

 Date Collected:
 02/08/91

 Date Received:
 2/14/91

 Date Extracted:
 2-21-91

 Date Analyzed:
 2-25-91

 Date Reported:
 3-4-91

0 !

U ; U ; U ;

	COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q	СОМРО	DUND	. Limit Co	mple nc. :/kg)* (
/	bis(2-Chloroethyl) ether	; 3800.0	!	! U !	! A-Rr	romophenyl-phenylether	3800.0	
1	1.3-Dichlorobenzene	1 3800.0	; !	101		nanthrene	1 3800.0 1	1 1
;	1,4-Dichlorobenzene	1 3800.0	!	<i>  U  </i>		hracene	1 3800.0 1	
1	Benzidine	115000.0	, !	; U ;	-	n-butylphthalate	; 3800.0 ;	1 1
!	1,2-Dichlorobenzene	1 3800.0	!	/ U /		oranthene		700 ;
!	1,2-Diphenylhydrazine	; 3800.0	!	;	; Pyre			400 ;
!	bis(2-Chloroisopropyl) ether	• 10.00.000.000.000	!	0		lbenzylphthalate	1 3800.0 1	1 1
!	N-Nitrosodimethylamine	1 3800.0	!	101		'-Dichlorobenzidine	1 7700.0	11
!	N-Nitroso-di-n-propylamine	1 3800.0	!	101		ro(a)anthracene		600 1
!	<i>Hexachloroethane</i>	1-3800 0	!	1 " 1		sene		100
1	Nitrobenzene	1 3800.0	; !	101	•	'2-Ethylhexyl) phthalate	1 3800.0 1	10 1
!	Isophorone	; 3800.0	, ,	/ U /		-octylphthalate	1 3800.0 1	! !
!	bis(2-Chloroethoxy) methane	1 3800.0	!	/ U /		o(b)fluoranthene		000 ;
!	1,2,4-Trichlorobenzene	! 3800.0	,	! " !		o(k)fluoranthene		900 ;
!	Naphthalene	1 3800.0	1	. u ,		o(a)pyrene		300 ;
!	Hexachlorobutadiene	: 3800.C		, u ,		no(1,2,3-cd/pyrene	1 3800.0 1	1 1
1	Hexachlorocyclopentadiene	; 3800.0	!	/ U /		nz(a,h)anthracene	1 3800.0	1 1
!	2-Chloronaphthalene	1 3800.0	,	! " !		o(g,h,i)perylene	1 3800.0 1	1 1
1	Dimethylphthalate	; 3800.0	!	! U !			7 3000.0 7	
	Acenapthtylene	1 3800.0	!	! ! !				
•	2,6-Dinitrotoluene	1 3800.0	ı	;	1 .			
	Hexachiorobenzene	1 3800.0		1 # 1				
	Ancenaphthene	1300.9		191				
	2.4-Dimitrotoluene	1 3300.0		1 11 1				
:	Diethylphthalate	1 3800.0		1 0 1				
	4-Chiorophenyl-phenylether	1 3500.0		/ U /				

! " !

: N-Witrosodiphenylamine (1)

1 3800.0 1

1 3800.0 1

^{*} All results expressed as dry wt. unless otherwise noted.

#### SEMINOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories, Inc.

Client Kame: Lawler, Matusky & Skelly Engineers

Project/Facility Name: Bergstol (535-005)

Sample Location: SS # 5

Matrix: Soil Nethod: EPA 625 Sample ID: 0722-17 Date Collected: 2/12/91 Date Received: 2/14/91 Date Extracted: 2-21-91 Date Analyzed: 2-26-91 Date Reported: 3-4-91

	_	COMPGUND	Detectio Limit (ug/kg!*	n Sample Conc. (ug/kg)*		Q		Detection Sample Limit Conc. COMPOUND (ug/kg)* (ug/kg)*	Q
	<i>'</i>	bis(2-Chioroethyi) ether	; 4000.0	!	/	U ;	. ,	; 4-Browophenyl-phenylether ; 4000.0 ;	 ! [[ !
	i	í,j-Dichlorobenzene	; 4000.0	!	!	U !	Ï	! Phenanthrene	1 1
	!	1.4-Dichlorobenzene	1 4000.0	1	,	U /	j	! Anthracene	1.1
	<i>!</i>	Benzidine	11600C.C	!		U /		; Di-n-butylphthalate ; 4000.0 ;	; v :
	!	1.2-Dichlorobenzene	1 4000.0	!		U 1		! Fluoranthene	1 0 :
	′	1.2-Diphenylhydrazine	1 4000.0	!		U!	:	! Pyrene ! 4000.0 ! 169000	1 1
		bis(3-Chloroisopropyl) ether	1 4000.0	!		U !	,	! Butylbenzylphthalate ! 4000.0 !	' " !
	<i>;</i>	N-Witrosodimethylamine	! 4000.0	1		<i>l'</i> /	<i>'!</i>		101
		N-Nitroso-di-m-propylamine	1 4000.0	7		U'	,	Benzo(a)anthracene	1 1
		<i>Hexachloroethane</i>	1 4000.0	į.		U!	,	Chrysene ! 4000.0 ! 122000	i i:
		Witrobenzene	1 4000.0	1		y /	,	bis(2-Ethylhexyl) phthalate   4000.0	1 1:
		Isophorone	1 4000.C			v !	΄,	Di-n-octylphthalate   4000.0	U     U
		bisi2-Chicroethoxy) methane	1 4000.0	1		<i>U !</i>	',	Benzo(b)fluoranthene   4000.0	
		1, 2, 4-Trichiorobenzene	1 4000.0	!		<i>U</i> /	΄,		101
		<i>Kaphthalene</i>	! 4000.0	,		y ;	',		<i>i i</i>
		Hexachlorobutadiene	1 4000.0	,		<i>v</i> /	,		101
		Hexachlorocyclopentadiene	1 4000.0	',		U	',		<i>i i</i>
		2-Chloronaphthalene	1 4000.0	<u>'</u>		v i	,	Dibenz(a,h)anthracene	1
		Dimethyiphthalate	1 4000.0	;		7 /		Benzo(g,h,i)perylene ! 4000.0 ;	! " !
		Acenapthtylene	1 4000.0			5 7 5 7			
		2 6-Dimitrotoluene	1 4000.0	,					
		Hexachlorobenzene	1 4000.0			; ;			
		Ancenaphthene	1000.0	16000		٤.			
		2.4-Sinitrotoluene	1 4000.0	10000	,	. ,			
		Biethylphthalate			:	•• ,			9 10
			1 4000.0					그 그 그 그리고 하는 그리고 하셨습니다. 그리고 하다 그리고 그리고 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 그리고 하는 그리고 하는 그리고 하는 그리고 하는 그리고 그리고 하는 그리고 그리고 그리고 그리고 그리고 그리고 그리고 그리고 그리고 그리고	
		M-Chlorophenyl-phenylether Fluorene	1 4000.0	, ,,,,,,		<i>!' !</i>			
•		Tuorene	1 4000.0	1 13000		,			

! N-Nitrosodiphenylamine (1) | 1 4000.0

^{*} All results expressed as dry wt. unless otherwise noted.

# SENIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS .

Laboratory Name: CAMO Laboratories, Inc. Client Name: Lawler, Matusky & Skelly Engineers Project/Facility Name: Bergstol (535-005)

Sample Location: SS # 6

Matrix: Soil Method: EPA 625

/ Diethylphthalate

; Fluorene

: 4-Chlorophenyl-phenylether / 3800.0 :

! N-Nitrosodiphenylamine (1) | 3800.0 !

! 3800.0 !

! 3800.0 !

 Sample ID:
 0722-18

 Date Collected:
 02/08/91

 Date Received:
 2/14/91

 Date Extracted:
 2-21-91

 Date Analyzed:
 2-26-91

 Date Reported:
 3-4-91

	COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q		CONPOUND	Detection Limit (ug/kg) *	Sample Conc. (ug/kg) *	Q
/	bis(2-Chloroethyl) ether	1 3800.0	!	·/ V /	/	4-Bromophenyl-phenylether	/ 3800.0 /		 / U /
1	1,3-Dichlorobenzene	1 3800.0		1 0 1	;	Phenanthrene	1 3800.0 1	16000	1 1
i	1,4-Dichlorobenzene	: 3800.0	1	! !!		Anthracene	1 3800.0 1	5600	1 1
/	<i>Benzidine</i>	115000.0		/ U /	j	Di-n-butylphthalate	1 3800.0 1	3000	1 0 1
1	1,2-Dichlorobenzene	1 3800.0		1 0 1	;	Fluoranthene	1 3800.0 1	45000	1 1
/	1,2-Diphenylhydrazine	1 3800.0		! " !	į	Pyrene	; 3800.0 ;	48000	1 1
!	bis(2-Chloroisopropyl) ether	1 3800.0		! " !	,	Butylbenzylphthalate	1 3800.0 1	,,,,,,	; v ;
/	N-Nitrosodimethylamine	; 3800.0 ;		1 0 1	í	3, 3'-Dichlorobenzidine	; 7700.0 ;		7 11
/	N-Nitroso-di-n-propylamine	1 3800.0 1		1 0 !	7	Benzo(a)anthracene	1 3800.0 1	35000	1 1
!	Hexachloroethane	1 3000.0 1		' " '	;	Chrysene	1 3800.0 1	27000	1 1
1	Nitrobenzene	1 3800.0		! # !	7	bis(2-Ethylhexyl) phthalate			' U !
;	Isophorone	1 3800.0		101	:	Di-n-octylphthalate	; 3800.0 ;		! " !
!	bis/2-Chloroethoxy! methane	1 3800.0 1		! !!!	:	Benzo(b) fluoranthene	! 3800.0 !	41000	1 1
/	1,2,4-Trichlorobenzene	1 3800.0 1		! " !	;	Benzo(k)fluoranthene	1 3800.0 1	29000	1 1
/	Naphthalene	1 3860.0 1		: v :	· '}	Benzo(a) pyrene	; 3800.0 ;	38000	1 1
!	Hexachlorobutadiene	1 3800.0 1		1 0 1	7	Indeno(1,2,3-cd)pyrene	; 3800.0 ;	3800	1 1
/	Hexachlorocyclopentadiene	1 3800.0 1		/ U /	:	Dibenz(a,h)anthracene	1 3800.0 1	0000	101
,	2-Chloronaphthalene	1 3800.0 1		! " !	1	Benzo(g,h,i/perylene	1 3800.0 1	8400	!!!
/	Dimethylphthalate	1 3800.0 1		: <i>u</i> :	· .				
!	Acenapthtylene	1 3300.0		: " ;		.*			
į	2,6-Dinitrotoluene	1 3800.0		' "					
!	Hexachlorobenzene	1 3800.0 1		! !! !					
/	Ancenaphthene	1 3800.0		,					
;	2.4-Dinitrotoluene	1 3500.0		1 11 1					

1 11 1

# LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

. 1
PROJECT BINGSTO
COLLECTION
SITE Production
FIELD
PERSONNEL T. Z
Rottom Sadiment

PROJECT No. 535

SAMPLE TYPE (Circle):

Drinking Water (Industrial Waste Coliform ( I / F ) Stream/Pond River/Ocean Leachate

Monitoring Wells Treatment Facility Other

Soil

PH3 PH3 PH5 PH5	AMETERS TIVE	A-; FILTEF ; (Y/N)
PH3 PH3 PH5 PH5	ATIETERS TIVE	(Y/N)
P# 3 P# 3 P# 5 P# 7		
PHS PHS PHS		
PHS PHS PHS		
P # 5 P # 5 -P # 7		
P#6 P#7		
P45 P47		
P#7		
~ Du - 1		
P#5		4
PAL		
PHY		
A Line		
shall 8/2		
Time: No. Bottle	s:   Received By	-114
Date/Time: 1705	Received By:	
Date/Time:	Received By:	
Received at	Laboratory By:	
· · · · · · · · · · · · · · · · · · ·	Time: No. Bottle   Date/Time:   1705     Date/Time:   1705	Time: No. Bottles: Received By 13    Date/Time: Received By: 1.8.9 / 705   Received By:   Date/Time: Received By:   Date/Time: Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Received By:   Date/Time:   Date/Time:   Received By:   Date/Time:   Date/Time:   Received By:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:   Date/Time:

Cne Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300

Sample Drop-Off: 53 Budion Avenue, Nyack, New York 10960

REC'D QAS

FEB 2 1 1991.

#### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD PROJECT No. PROJECT COLLECTION LMS FACILITY SITE FIELD PERSONNEL SAMPLE TYPE (Circle): Bottom Sediment Drinking Water Monitoring Wells Stream/Pond Soil Industrial Waste River/Ocean Treatment Facility Coliform (T/F) Leachate Other_

				<u> </u>		SAMPLE	PREP
SAMPLE						PRESERVA-	FILTER
ID NUMBER	DATE	TIME	SAMPLE SITE	PARA	METERS	TIVE	(Y/N)
16124	2-8-91		W.S.#3	12. 1. Vuc	5 1 84 6 PURA	4.	N
16/12			W.S. #5				
16121			ws. #6				
16123	$\downarrow$		W.S. 47				
18551	2-7-91		WS. HB	7	27754		
10116	2-7-91		W. S. #9	1	7		V
				1-10			
		0	/	1/15/91			
11.75			0	35-25			
			O-C sheets				
		white	copy missing	3 vere			
		Sent	with samples	to			
		CA	mo (2/14/91)	7 3			
			Gulg		31.		
			- Charg				
		ROPE TO SE					
Relinquishe	0 B4: []	17 12	Date/Time:	No. Bottle	g: Receive	d By:	d
Relinquishe	d By:	9	Date/Time   2-74-97/		-Rece: ved By		
Relinguishe	drB <b>9</b>		Date/Time		Received By		
Messenger		() Shipp	ed To:	eceived at	aboratory By		
Remarks	NE'77'23'110			1012577772		200 82 03 22	

One Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300

REC'D QAS

PROJECT No. <u>535-005</u>		PROJECT	
LMS FACILITY Nyack		COLLECTION B	ergstol
SAMPLE TYPE (Circle):		FIELD PERSONNEL	TZ Jm'K
Drinking Water Stream/Pond Industrial Waste River/Ocean Coliform (T/F) Leachate	Monitoring Wells Treatment Facility	Bottom Sediment	
Coliform (T./F) Leachate	Other		

	1	1	1	1	SAMPLE	PREP
SAMPLE	J. D.				PRESERVA-	FILTER
ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS PP BNAs and	TIVE	(Y/N)
18553	2-8-91	1100	SS#2	PP vocs + xylenes	40	N
18555		1330	SS #5			
18554		1000	55#6			
13217		1400	55#1	PP Vocs +xylenes		
13218		1137	<i>\$5</i> #3			
16500		1200	55#4			
18552	1	1300	55#7	V		
	Towns on the	44.1				
induished	By: Duzewic	Q :	Date/Time:/ 2-14-9/ //400	No. Bottles: Receiv	ed By:	
linquished	Ву∕:		Date/Time	Received By		Marian Palana
linquished	B <b>y</b>		Date/Time	Received By		
ssenger:		Shipp	ed To:	eceived at Laboratory By		
marks					SPECIAL ST	6 465

(ne Blue Hill Plaza Pearl River | New York 10965; (914) 235-8300 Sample Drop-Off: 53 Budson Avenue, Mysok; New York 10960

REC'D: QAS FEB 2 1 1991

### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

Page	. 1	of	
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PROJECT N	o. <u>5</u> 35	5-005				PROJECT				
COLLECTION										
SITE Ber						rgstol				
SAMPLE TYT	SAMPLE TYPE (Circle):				DK JMCK					
Drinking Water Stream/Pond Monitoring Wells Bottom Sedime						ent				
Industrial Waste River/Ocean Treatment Facility Soil Coliform (T/F) Leachate Other										
SAMPLE	IPLE !						SAMPLE PRESERVA-			
ID NUMBER			SAMPLE SITE		PARAMETERS		TIVE		(Y/N)	
1 18558 1 18559	Z-12-	91 1130	B/P-6		P.P VOCS + xylenes		40		N	
1:18565	1	<u> </u>	1		1.1 vocs v xyrenes		4-			
2 18564	+	1210	MW	- 18						
18563		₩			P.P. BNA					3 % 4
1 18567		1245			PP VOCs +	EPA 624 Xylenes				
18556			$\downarrow$		P.P. BU					
17105		1350	B/P -		PP VOC = X			****		
18505	1000		The state of		111100	ylanes				1.1.K
18506		1440	MW-	20						
18514	1	1507	MW-	2.2				1.6.3	V	
							Tokari Ligazio	64500 64500 85407		
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HU	Messenger: Shipped To: Received at Laboratory By:									
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96-85-85-86-86-1975	<b>对于1000</b>	的信息的证明的	30年10年10日日	<b>新</b> 春日 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年 1955年	等的社会。然后他们	和特殊的	可多个1845	AYONA'S	MANAGE S	47.04.05 (8)

(ne Blue Hill: Plaza, Pearl River, New York 10965 (914) 735-8300 Sample Drop-Off: 53 Hudmon Avenue; Nyack, New York 10960

#### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

Monitoring Wells

Other .

Treatment Facility

	١		1
Page	1	of	1
Lage	4	O1	<i></i>

PROJECT No. 535-005

LMS FACILITY NYACK

SAMPLE TYPE (Circle):
Drinking Water Stream/Pond Industrial Waste River/Ocean Coliform (T/F) Leachate

SAMPLE JD NUMBER DATE TIME SAME 18559 V2 2 12/01 1130 B/P-18565 V1 12/0 MW-18565 V1

AMFIFD WITH BAILER

18556

PROJECT WELL SAMPLE
COLLECTION BERCOSTOL

FIELD
PERSONNEL

DIT JMCK

Bottom Sediment

Soil

	t I	;	1	!		1 0	AMDI E	DOFD
SAMPLE		1				SAMPLE PRE		
ID NUMBER	1 1	TIME	SAMPLE SITE	PARAMETE	RS	TI	VB ;	(Y/N)
18565 VA	2/10/9/		1 7 1	624		400	-	$\sim$
118564 VA		1210	MW-19	1				
18563				BNA'S	1			
18567 VI		1245		624		-	1	
18563			1	BNA'S				
117/05 V,	,	1350	18/9-11	624			:	
118505 07	<u> </u>	1440					:	
118514 VI		1507	\$\frac{1}{2}\text{x}		:			
							7 1	
			* .					
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Relinquished	d By:		Date/Time	: Rec	eived By:			
Messenger:		Shipp		eceived at Labor	atory By:			
Remarks:								

Cne Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Mynck, New York 10960

REC'D QAS



# CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > March 8, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt Laboratory Director

REC'D QAS

MAR 1 2 1991

CAMO LABORATORIES, INC 367 VIOLET AVENUE

POUGHKEEPSIE, NEW YORK 12601

(914) 473-9200

FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

QA Department

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Date of Invoice:

3/08/91 27274

P.O. #: Typed by:

kas

Invoice #:

91-02-0859

LMS Project No.: 535-005

Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 2/20/91 Date Samples Received: Samples Collected By:

Samples Delivered By:

Matrix:

2/22/91 Client Hugo

Water/Soil

(01) WS #A

(02) WS #B

(03) WS #C (04) WS #D1 (05) WS #D2 (06) WS #E

(07) SS #A 4'-6' (08) SS #B 2'-4'

Unit/

Parameters Measure (01)

(02)

(03)

(04)

EPA Method 624 & Xylene

TPH by IR

mg/kg wet wt.

Method 8240

ug/kg

% Solid

Analysis Comments:

* See attached tables

Page 1 of 2.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

CAMO LABORATORIES, INC 367 VIOLET AVENUE

POUGHKEEPSIE, NEW YORK 12601

(914) 473-9200

FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

QA Department

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Date of Invoice:

3/08/91 27274

P.O. #: Typed by:

kas

Invoice #:

91-02-0859

LMS Project No.:

535-005 Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 2/20/91 Date Samples Received: 2/22/91 Samples Collected By: Client Samples Delivered By: Hugo

Matrix: Water/Soil

(01) WS #A (02) WS #B (05) WS #D2 (06) WS #E

(03) WS #C (04) WS #D1 (07) SS #A 4'-6' (08) SS #B 2'-4'

Unit/

Parameters Measure

(05)

(06)

(07)(80)

EPA Method 624 & Xylene

TPH by IR

mg/kg wet wt.

2,000

Method 8240

ug/kg

22,000

% Solid

83 38

Analysis Comments:

* See attached tables

Page 2 of 2.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

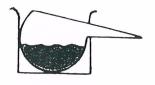
All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0859-01 Client Name: LMS Date Collected: 2/20/91 Project/Facility Name: Bergstol 535-005 Date Received: 2/22/91

Sample Location: WS #A

Date Analyzed: 2/27/91 Matrix: Water Method: EPA 624 Date Reported: 3/08/91

Detection Sample Limit Conc. COMPOUND (ug/L) (ug/L) Chloromethane 10.0 Bromomethane 10.0 Vinyl Chloride 10.0 Chloroethane Methylene Chloride
Trichlorofluoromethane 5.0 5.0 5.0 Trans-1,2-dichloroethylene | 5.0 1,1-Dichloroethene 1,1-Dichloroethane 5.0 1,1-Dichloroethane
Dichlorodifluoromethane 160 i 5.0, ! U Chloroform 5.0 1,2-Dichloroethane 5.0 2-Chloroethylvinyl Ether 10.0 ! U 1,1,1-Trichloroethane 5.0 Carbon Tetrachloride 5.0 ! U Bromodichioromethane 5.0 ! U 1,2-Dichloropropane 5.0 U cis-1,3-Dichloropropene 5.0 ! U Trichloroethene 5.0 U Dibromochloromethane 5.0 U 1,1,2-Trichloroethane 5.0 Benzene 5.0 l U trans-1,3-Dichloropropene | 5.0 ! U Bromoform 5.0 Tetrachloroethene 5.0 l U 1,1,2,2-Tetrachlorethane 5.0 Toluene 5.0 Chlorobenzene 5.0 Ethylbenzene 5.0 ! U Acrolein 100.0 ! U Acrylonitrile U Xylenes 5.0



# CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > April 15, 1991

Dear Client:

Enclosed please find your sample results and our invoice for services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt Laboratory Director

si est

CAMO LABORATORIES, INC 367 VIOLET AVENUE POUGHKEEPSIE, NEW YORK 12601 (914) 473-9200 FED. I.D. #14-1725654

NYS LAB ID NO.: 10310

QA Department

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Date of Invoice:

4/15/91

P.O. #:

27051 kas

Typed by: Invoice #:

91-04-1684

LMS Project No.: 535-005

Analytical Report

Date Samples Collected: Date Samples Received:

Samples Collected By:

Samples Delivered By:

Matrix:

Sample Identification

(01) B-11

Unit/

Measure

4/09/91

4/09/91

Client

Client

Water

(01)

EPA Method 624

Parameters

ug/l

*

Analysis Comments:

* See attached tables.

Results called into Stu Bassel on 4/10/91 at 11:30 am.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

Laboratory Name: CAMO Laboratories, Inc.

Client Name: LMS

Project/Facility Name: Bergstol 535-005

Sample Location: B-11

Matrix: Water Method: EPA 624 Sample ID: 1684-01 Date Collected: 4/09/91

Date Received: 4/09/91
Date Analyzed: 4/09/91

Date Reported: 4/15/91

COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q	
Chloromethane Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Trichlorofluoromethane Trans-1,2-dichloroethylene 1,1-Dichloroethene 1,1-Dichloroethane Dichlorodifluoromethane Chloroform 1,2-Dichloroethane 2-Chloroethylvinyl Ether 1,1,1-Trichloroethane Carbon Tetrachloride Bromodichloromethane 1,2-Dichloropropane cis-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroethane Benzene trans-1,3-Dichloropropene Bromoform Tetrachloroethene 1,1,2,2-Tetrachlorethane Toluene Chlorobenzene Ethylbenzene Acrolein Acrylonitrile	10.0 10.0 10.0 10.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	4.0	7	

# SEXIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc.

Client Name: LMS

Project/Facility Wame: Bergstol Sample Location: Field Blank

Matrix: Water

Method: EPA 625 (BM Only)

Sample ID: 1080-04
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

	COMPOUND		Detecti Limit (ug/L)	Oñ	Sample Conc. (ug/L)	Q
!	in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of th	¦	10.0	1		U
1	1.3-Dichlorobenzene	ŀ	10.0	Ì		101
1	1.4-Dichlorobenzene	1	10.0	į		101
ļ	Benzidine	1	40.0	į		101
!	1,2-Dichlorobenzene	!	10.0	i		1 0 1
!	1.2-Diphenylhydrazine	İ	10.0	i		1 0 1
ŀ	bis(2-Chloroisopropyl) ether	i	10.0	i		0
ŀ	M-Mitrosodimethylamine	Ì	10.0	:		0
i	N-Nitroso-di-n-propylamine	İ	10.0	i		101
l	Hexachloroethane	İ	10.0	į		0
l	Nitrobenzene	İ	10.0	ì		1 0 1
!	Isophorone	1	10.0	į		1 4 1
	bis(2-Chlorcethoxy) methane	!	10.0	i		101
	1,2,4-Trichlorobenzene	Ì	10.0	!		101
	Naphthalene	1	10.0	į		
	Hexachlorobutadiene	1	10.0-	i		101
	Hexachlorocyclopentadiene	1	10.0	i		1 0 1
	2-Chloronaphthalene	1	10.0	i		1 4 1
	Dimethylphthalate	1	10.0	i		1 0 1
	Acenapthtylene	1	10.0	į		1 4 1
	2,6-Dinitrotoluene	1	10.0	į		101
	Hexachlorobenzene	!	10.0	!		! [ ]
	Ancenaphthene		10.0	i		101
	2.4-Dinitrotoluene		10.0	i		101
	Diethylphthalate		10.0	!		[ ]
	4-Chlorophenyl-phenylether		10.0	į		1 11 1
	Fluorene		10.0	i		! IT !

| M-Witrosodiphenylamine (1) | 10.0 |

	COMPOUND		Detecti Limit (ug/L)	on 	Sample Conc. (ug/L)		Q	
!	4-Bromophenyl-phenylether	!	10.0	!		!	U	!
1	Phenanthrene .	!	10.0	1		i	Ū	i
ŀ	Anthracene	1	10.0	!		į	Ū	i
1	Di-n-butylphthalate	!	10.0			i	U	!
l	Pluoranthene	!	10.0	i		Î	J	!
l	Pyrene	Ï	10.0	Ì		į	U	i
!	Butylbenz-lphthalate	1	10.0	1		į	Ū	;
!	3.3'-Dichlorobenzidine	!	20.0	1		i	U	į
!	Benzo(a)anthracene	!	10.0	1		į	ũ	i
!	Chrysene	ŀ	10.0	1		į	Ū	i
1	bis(2-Ethylhexyl) phthalate	!	10.0	1		i	Ū	i
!	Di-n-octylphthalate	1	10.0	1		i	U	!
!	Renzo(b)fluoranthene	!	10.0	1		i	ij	i
	Benzo(k)fluoranthene	!	10.0	1		İ	U	į
	Benzo(a)pyrene	!	10.0	1		i	U	į
	Indeno(1,2,3-cd)pyrene	!	10.0	1		i	Ū	1
	Dibenz(a,h)anthracene	!	10.0	1		i	U	!
	Benzo(g,h,i)perylene	1	10.0	-		į	Ũ	!

Laboratory Name: CAMO Laboratories, Inc.

Client Name: LMS

Project/Facility Name: Bergstol 535-005

Sample Location: WS #D1

Matrix: Water Method: EPA 624 Sample ID: 0859-04

Date Collected: 2/20/91 Date Received: 2/22/91

2/27/91

Date Reported: 3/08/91

Date Analyzed:

	COMPOUND	Detection Limit (ug/L)		Sample Conc. (ug/L)		Q	
!	Chloromethane	10.0	1		}	U	-
1	Bromomethane	10.0	!		1	U	ŀ
!	Vinyl Chloride	10.0	- 1		1	U	ĺ
1	Chloroethane	10.0	1		i	U	i
!	Methylene Chloride	5.0	1		1	U	1
1	Trichlorofluoromethane	5.0	1		!	U	
1	Trans-1,2-dichloroethylene	5.0	İ		į	IJ	į
1	1,1-Dichloroethene	5.0	Ì			U	
1	1,1-Dichloroethane	5.0	j		i	U	į
1	Dichlorodifluoromethane	5.0	į		i	U	į
-	Chloroform	5.0	i		i	U	į
ł	1,2-Dichloroethane	5.0	- 1		:	U	i
!	2-Chloroethylvinyl Ether	10.0	i		i	U	i
ł	1,1,1-Trichloroethane	5.0	İ		i	U	i
!	Carbon Tetrachloride	5.0	į		į	IJ	:
!	Bromodichloromethane	1 5.0	1		i	U	i
!	1,2-Dichloropropane	5.0	i			U	į
ł	cis-1,3-Dichloropropene	1 5.0	Ì		į	U	i
ł	Trichloroethene	5.0	i		í	Ū	į
1	Dibromochloromethane	5.0	i		i	U	i
1	1,1,2-Trichloroethane	5.0	İ		i	U	i i
<b>!</b>	Benzene	5.0	İ		i	U	i
!	trans-1,3-Dichloropropene	5.0	İ		i	U	i
1	Bromoform	5.0	Ì		i	U	Ì
ł	Tetrachloroethene	5.0	ĺ		i	U	i
1	1,1,2,2-Tetrachlorethane	5.0	İ		i	U	Î
1	Toluene	5.0	i		i	U	i
-	Chlorobenzene	5.0	i		i	U	i
}	Ethylbenzene	5.0	i		i	Ū	i
1	Acrolein	100.0	i		į	Ü	i
1	Acrylonitrile	100.0	i		į	Ü	i
!	Xylenes	5.0	1		Ì	Ü	i

0859-05

Laboratory Name: CAMO Laboratories, Inc. Sample ID:

Client Name: LMS Date Collected: 2/20/91 Project/Facility Name: Bergstol 535-005 Date Received: 2/22/91

Project/Facility Name: Bergstol 535-005 Date Received: 2/22/91 Sample Location: WS #D2 Date Analyzed: 2/27/91

Matrix: Water
Method: EPA 624

Date Reported: 3/08/91

	COMPOUND	Detection Limit (ug/L)		Sample Conc. (ug/L)	Q	
ł	Chloromethane	10.0	 ¦		   U	- 1
1	Bromomethane	10.0	!		¦ U	1
1	Vinyl Chloride	10.0	1		¦ U	1
ł	Chloroethane	10.0	-		¦ U	1
. 1	Methylene Chloride	1 5.0	1		¦ U	1
1	Trichlorofluoromethane	5.0	1		l U	!
1	Trans-1,2-dichloroethylene	1 5.0	}		¦ U	!
ŀ	1,1-Dichloroethene	5.0	1		l U	1
ł	1,1-Dichloroethane	5.0	i		l u	1
1	Dichlorodifluoromethane	5.0	!		¦ U	1
1	Chloroform	1 5.0	!		¦ U	1
ł	1,2-Dichloroethane	5.0	{		¦ U	1
ŀ	2-Chloroethylvinyl Ether	10.0	!		¦ U	1
ł	1,1,1-Trichloroethane	5.0	{		¦ U	1
1	Carbon Tetrachloride	5.0	!	Te	! !!	!
}	Bromodichloromethane	5.0	i		¦ U	!
1	1,2-Dichloropropane	5.0	!		¦ U	!
!	cis-1,3-Dichloropropene	5.0	1		¦ U	1
}	Trichloroethene	5.0	1		¦ U	1
!	Dibromochloromethane	5.0	1		¦ U	}
1	1,1,2-Trichloroethane	5.0	1		¦ U	1
1	Benzene	5.0	1		¦ U	1
!	trans-1,3-Dichloropropene	1 5.0	ł		¦ U	1
1	Bromoform	5.0	1		¦ U	1
1	Tetrachloroethene	5.0	ł		¦ U	1
ł	1,1,2,2-Tetrachlorethane	1 5.0	1		¦ U	1
1	Toluene	5.0	1		¦ U	}
1	Chlorobenzene	5.0	!		¦ U	!
1	Ethylbenzene	5.0	!		U	1
ł	Acrolein	100.0	1		¦ U	1
1	Acrylonitrile	100.0	1		¦ U	1
	Xylenes	5.0	1		¦ U	1

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 0859-06
Client Name: LMS Date Collected: 2/20/91
Project/Facility Name: Bergstol 535-005 Date Received: 2/22/91
Sample Location: WS #E Date Analyzed: 2/27/91

Matrix: Water

Method: EPA 624 Date Reported: 3/08/91

	COMPOUND	Detection Limit (ug/L)		Sample Conc. (ug/L)	Q	
1	Chloromethane	10.0		13		-
}	Bromomethane	10.0	ł		¦ U	1
}	Vinyl Chloride	10.0	1		¦ U	1
1	Chloroethane	10.0	1		; U	1
ł	Methylene Chloride	5.0	1		¦ U	1
!	Trichlorofluoromethane	5.0	!		¦ U	!
ł	Trans-1,2-dichloroethylene	5.0	1		U	!
1	1,1-Dichloroethene	5.0	!		¦ U	1
ŀ	1,1-Dichloroethane	5.0	1		U	1
ł	Dichlorodifluoromethane	5.0	1		l U	1
}	Chloroform	5.0	1		¦ U	1
ł	1,2-Dichloroethane	5.0	1.		¦ U	!
1	2-Chloroethylvinyl Ether	10.0	1		¦ U	1
ł	1,1,1-Trichloroethane	5.0	l l		{ U	1
!	Carbon Tetrachloride	5.0	!		; U	!
ŀ	Bromodichloromethane	5.0	1		¦ U	;
1	1,2-Dichloropropane	5.0	!		¦ U	!
ł	cis-1,3-Dichloropropene	1 5.0	ł		¦ U	1
	Trichloroethene	5.0	!		¦ U	1
1	Dibromochloromethane	1 5.0	ł		¦ U	ŀ
1	1,1,2-Trichloroethane	5.0	1		¦ U	ł
1	Benzene	5.0	1		¦ U	ł
1	trans-1,3-Dichloropropene	5.0	!		¦ U	1
1	Bromoform	1 5.0	!		l U	1
1	Tetrachloroethene	5.0	!		¦ U	1
!	1,1,2,2-Tetrachlorethane	5.0	1		¦ U	!
ł	Toluene	5.0	!		¦ U	1
ł	Chlorobenzene	5.0	1		l U	1
	Ethylbenzene	5.0	1		¦ U	1
ł	Acrolein	100.0	1		¦ U	1
1	Acrylonitrile	100.0	1		l U	!
{	Xylenes	5.0	ł		l U	ŀ

Laboratory Name: CAMO Laboratories, Inc. Samp Client Name: LMS Date

Project/Facility Name: Bergstol 535-005

Sample Location: SS #A 4'-6'

Matrix: Soil Method: EPA 8240 Sample ID: 0859-07A Date Collected: 2/20/91

Date Received: 2/22/91 Date Analyzed: 3/07/91

Date Reported: 3/08/91

	COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q	_
1	Chloromethane	12	1	U	-
1	Bromomethane	1 12	1	U	1
1	Vinyl Chloride	12	1	l U	Ì
1	Chloroethane	1 12	1	U	1
1	Methylene Chloride	1 6	1 7	B	Ì
1	Acetone	12	55	l B	1
1	Carbon Disulfide	1 6	1	l U	1
1	1,1-Dichloroethene	1 6	1	l U	1
1	1,1-Dichloroethane	1 6	1	U	1
1	1,2-Dichloroethene (Total)	1 6	1	U	1
1	Chloroform	}	1	l U	1
!	1,2-Dichloroethane	1 6	1	U	1
1	2-Chloroethylvinyl Ether	1 12	1	U	1
1	2-Butanone	1 12	Ì	U	Ì
1	1,1,1-Trichloroethane	1 6	Î	U	İ
1	Carbon Tetrachloride	1 6	1	U	ĺ
1	Vinyl Acetate	12	1	U	İ
1	Bromodichloromethane	1 6	ĺ	U	1
1	1,2-Dichloropropane	6	1	U	1
1	cis-1,3-Dichloropropene	1 6	1	l U	1
1	Trichloroethene	1 6	ĺ	U	i
1	Dibromochloromethane .	1 6	1	U	1
1 .	1,1,2-Trichloroethane	1 6	1	U	1
1	Benzene	6	1	ΙŪ	i
1	trans-1,3-Dichloropropene	1 6	ĺ	U	İ
1	Bromoform	1 6	1	U	Ì
}	4-Methyl-2-Pentanone	12	İ	U	i
1	2-Hexanone	1 12	Ì	l U	Ì
}	Tetrachloroethene	1 6	i	ΙŪ	i
1	1,1,2,2-Tetrachlorethane	1 6	İ	Ü	i
1	Toluene	1 6	İ	ΙŪ	i
1	Chlorobenzene	1 6	·	ΙÜ	i
1	Ethylbenzene	i 6	İ	Ü	i
1	Styrene	1 6	1.	U	i
1	Total Xylenes	6	İ	Ü	i
					_

^{*} as dry wt.

Laboratory Name: CAMO Laboratories, Inc.

Client Name: LMS

Project/Facility Name: Bergstol 535-005

Sample Location: SS #B 2'-4'

Matrix: Soil Method: EPA 8240 Sample ID: 0859-08A

Date Collected: 2/20/91
Date Received: 2/22/91

Date Analyzed: 3/07/91

Date Reported: 3/08/91

COMPOUND	Detection Limit (ug/kg)*	Sample Conc. (ug/kg)*	Q	
Chloromethane	132	1		1
Bromomethane	1 132	Î	U	i
Vinyl Chloride	132	İ	U	i
Chloroethane	132	Ì	U	i
Methylene Chloride	1 66	239	l B	i
Acetone	132	1400	l B	i
Carbon Disulfide	1 66	1	Ü	i
1,1-Dichloroethene	1 66	Î	U	i
1,1-Dichloroethane	1 66	579	i	i
1,2-Dichloroethene (Total)	1 66	1	. ע	i
Chloroform	1 66	i ·	U	i
1,2-Dichloroethane	1 66	1	U	ĺ
2-Chloroethylvinyl Ether	132		U	i
2-Butanone	132	1	ן ט	1
1,1,1-Trichloroethane	1 66	1	U	Ì
Carbon Tetrachloride	1 66	1	U	1
Vinyl Acetate	132	1	U	ĺ
Bromodichloromethane	66	1	U	1
1,2-Dichloropropane	66		Ü	i
cis-1,3-Dichloropropene	1 66	1	U	
Trichloroethene	1 66	1	ן ט	ĺ
Dibromochloromethane	l 66	1	ו ט ו	ĺ
1,1,2-Trichloroethane	l 66	1	l U I	ĺ
Benzene	1 66	1	U	ĺ
trans-1,3-Dichloropropene	66	1	U	
Bromoform	66	1	U	ĺ
4-Methyl-2-Pentanone	132	1 316	1	
2-Hexanone	132	1	U !	l
Tetrachloroethene	66	1	I U I	
1,1,2,2-Tetrachlorethane	66	1	U	
Toluene	66	245	1	
Chlorobenzene	66	447	1	
Ethylbenzene	66	1080	Î	
Styrene	66	1.	ו טו	
Total Xylenes	66	11800	l i	

^{*} as dry wt.

## LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

Page / of 1

PROJECT No. BERGSTAL PROJECT **COLLECTION** LMS FACILITY NIACK BERSTOL SITE FIELD SAMPLE TYPE (Circle): PERSONNEL T. ZONB. Lip. J. McK Drinking water Stream/Pond Monitoring-Wells Bottom Sediment; Industrial Waste River/Ocean Treatment Facility Coliform (T/F) Leachage 2/27/71 Other SOIL SAMPLE PREP SAMPLE PRESERVA-; FILTER 1D NUMBER DATE TIME SAMPLE SITE **PARAMETERS** TIVE (Y/N)A 16/19 7.20.91 VOA 1. 62-9 127/1 WS = A 1/6/13 A16111  $\subset$ 1/6/122 1/6//4/ 0, A16115 16498 1000 4-61 VOAS +TPH A10.499 1010 (EPA 8240 + 418.) Relinquished (By: Date/Time: No. Bottles: Received By: 2.20.90 Relinquished By: Date/Time: Received By: 2/21/9/ Relinquished By: Date/Time: Received By:

Cne Biue Hill Plaza, Pearl River, New York 10965

Shipped To:

Remarks:

Received at Laboratory By:

1 Kathy Sullivan

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 19960



# CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > March 20, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt Laboratory Director

REC'D QAS

MAR 2 5 1991

CAMO LABORATORIES 367 VIOLET AVENUE

POUGHKEEPSIE, NEW YORK 12601

(914) 473-9200

FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

QA Department

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Date of Invoice:

P.O. #:

Typed by: Invoice #: 3-19-91 27274 mlj

91-03-1080

LMS Project No.: 535-005

Facility: Bergstol

Analytical Report

Sample Identification

Date Samples Collected: 3-6-91 Date Samples Received: 3-7-91

Client

(01) PP1 (02) P-6

Samples Collected By: Samples Delivered By:

Hugo Messenger

(03) PP2

Matrix:

Water

(04) Field Blank

Parameters

Unit/ Measure

(01) (02)

(04)

(03)

Method 624 & Xylenes Base Neutrals

ug/L ug/L

Analysis Comments:

* See attached tables.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 1080-01 Client Name: LMS Date Collected: 3-6-91 Project/Facility Name: Bergstol Date Received: 3-7-91 Sample Location: PP1 Date Analyzed: 3-10-91 Matrix: Water Method: EPA 624 Date Reported: 3-19-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q 	
1	Chloromethane	10.0		l U	ļ
1	Bromomethane	10.0		l U	1
ł	Vinyl Chloride	10.0		l U	l
ŀ	Chloroethane	10.0		l U	l l
1	Methylene Chloride	5.0		l U	l
1	Trichlorofluoromethane	1 5.0		l U	1
1	Trans-1,2-dichloroethylene	5.0		l U	ľ
!	1,1-Dichloroethene	5.0	હે `	l U	!
1	1,1-Dichloroethane	5.0 - 4		l U	!
1	Dichlorodifluoromethane	1 5.0 ¦		l u	!
ļ	Chloroform	5.0		l U	,
!	1,2-Dichloroethane	5.0		U	!
!	2-Chloroethylvinyl Ether	10.0		l U	1
!	1,1,1-Trichloroethane	5.0		l U	!
!	Carbon Tetrachloride	5.0		U	l
!	Bromodichloromethane	5.0		U	!
1	1,2-Dichloropropane	5.0		ן טן	
1	cis-1,3-Dichloropropene	5.0		U U	i `
i	Trichloroethene	5.0		U	
i	Dibromochloromethane	5.0		U	
1	1,1,2-Trichloroethane	5.0		U	
i .	Benzene	5.0		U	
ì	trans-1,3-Dichloropropene	5.0		U	
1 .	Bromoform	5.0		U	
ŀ	Tetrachloroethene	5.0		U	
	1,1,2,2-Tetrachlorethane	5.0		U	
!	Toluene	5.0		U	
!	Chlorobenzene	5.0		U	
!	Ethylbenzene	5.0		U	
!	Acrolein	100.0		U	
	Acrylonitrile	100.0		U	
i 	Xylene	5.0		U	

Laboratory Name: CAMO Laboratories, Inc. Sample ID: 1080-03A Client Name: LMS Date Collected: 3-6-91 Project/Facility Name: Bergstol Date Received: 3-7-91 Sample Location: PP2 Date Analyzed: 3-12-91 Matrix: Water Method: EPA 624 Date Reported: 3-19-91

Chloromethane	
Bromomethane   10.0   U Vinyl Chloride   10.0   U Chloroethane   10.0   U Methylene Chloride   5.0   U Trichlorofluoromethane   5.0   U	
Vinyl Chloride   10.0   U Chloroethane   10.0   U Methylene Chloride   5.0   U Trichlorofluoromethane   5.0   U	
Methylene Chloride   5.0   U Trichlorofluoromethane   5.0   U	
Trichlorofluoromethane   5.0   U	
	-  -  -  -  -
Trans-1,2-dichloroethylene   5.0   U	
	!
1,1-Dichloroethene   5.0   U	1
1,1-Dichloroethane   5.0   U	!
Dichlorodifluoromethane   5.0   U	
Chloroform   5.0   U	1
1,2-Dichloroethane   5.0   U	1
2-Chloroethylvinyl Ether   10.0   U	}
1,1,1-Trichloroethane   5.0   U	!
Carbon Tetrachloride   5.0   U	1
Bromodichloromethane   5.0   U	.
1,2-Dichloropropane   5.0   U	1
cis-1,3-Dichloropropene   5.0   U	1
Trichloroethene   5.0   U	1
Dibromochloromethane   5.0   U	!
1,1,2-Trichloroethane   5.0   U	1
Benzene   5.0   U	1
trans-1,3-Dichloropropene   5.0   U	1
Bromoform   5.0   U	1
Tetrachloroethene   5.0   U	1
1,1,2,2-Tetrachlorethane   5.0   U	1
Toluene   5.0   U	}
Chlorobenzene   5.0   U	1
Ethylbenzene ; 5.0 ; U	1
Acrolein   100.0   U	1
Acrylonitrile   100.0   U	!
Xylene	{

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc.

Client Name: LMS

Project/Facility Name: Bergstol Sample Location: PP1

Matrix: Water

Method: EPA 625 (BM Only)

Sample ID: 1080-01 Date Collected: 3-6-91 Date Received: 3-7-91 Date Extracted: 3-12-91 Date Analyzed: 3-13-91

Date Reported: 3-19-91

bis(2-Chloroethyl) ether   10.0		0	
		U	
! 1.3-Dichlorobenzene	!		!
1.4-Dichlorobenzene   10.0	ł	U	!
Benzidine   40.0		Ũ	i
1 1 2-Dichlorobenzene   10.0	1	η	!
1.2-Diphenylhydrazine   10.0	1	U	i
bis(2-Chloroisopropyl) ether   10.0	1	U	i
N-Nitrosodimethylamine   10.0	İ	Ū	İ
N-Nitroso-di-n-propylamine   10.0	1	U	1
Hexachloroethane   10.0	!	U	Ì
! Mitrobenzene	1	U	1
! Isophorone   10.0	i	ũ	İ
bis(2-Chloroethoxy) methane   10.0	!	ű	i
1 1.2.4-Trichlorobenzene   10.0	1	U	İ
! Naphthalene   10.0	1	U	1
Hexaculorobutadiene   10.0	-	J	!
Hexachlorocyclopentadiene   10.0	!	U	!
2-Chloronaphthalene   10.0	1	U	!
Dimethylphthalate   10.0	!	Ţ	!
Acenapthtylene   10.0	!	U	!
2,6-Dinitrotoluene   10.0	1	U	!
Hexachlorobenzene   10.0	!	U	!
Ancenaphthene   10.0	1	U	!
2.4-Dinitrotoluene   10.0	!	U	!
Diethylphthalate   10.0	!	U	!
4-Chlorophenyl-phenylether   10.0	!	U	ļ
Fluorene   10.0	l	U	!
N-Witrosodiphenylamine (1)   10.0	ļ	Ŋ	!

	COMPOUND		Detection Limit (ug/L)	on	Sample Conc. (ug/L)		Q	
!	4-Bromophenyl-phenylether	!	10.0	1		!	Ţ	
1	Phenanthrene	!	10.0	!		- 1	U	1
!	Anthracene	1	10.0	1		}	Ţ	!
!	Di-n-butylphthalate	!	10.0	!		١	U	!
1	Fluoranthene	1	10.0	!		!	U	1
!	Pyrene	!	10.0	1		!	U	!
!	But; benzylphthalate	!	10.0	1		1	U	!
!	3,3'-Dichlorobenzidine	1	20.0	1		!	U	1
1	Benzo(a) anthracene	!	10.0	!		!	U	!
!	Chrysene	!	10.0	1		!	U	1
!	. bis(2-Ethylhexyl) phthalate	1	10.0	1		1	U	1
ŀ	Di-n-octylphthalate	1	10.0	1		1	U	İ
!	Benzo(b)fluoranthene	!	10.0	1		;	ũ	i
1	Benzo(k)fluoranthene	1	10.0	1		1	U	1
!	Benzo(a)pyrene	!	10.0	1		1	Ũ	!
!	Indeno(1,2,3-cd)pyrene	!	10.0	ł	**	- 1	ľ	ï
!	Dibenz(a,h)anthracene	!	10.0	1		1	U	1
1	Benzo(g.h,i)perylene	!	10.0	1		1	U	1

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc.

Client Name: LMS

Project/Facility Name: Bergstol

Sample Location: P-6

Matrix: Water

Hexachlorobenzene

| 2.4-Dinitrotoluene | 10.0 | Diethylphthalate | 10.0 |

4-Chlorophenyl-phenylether | 10.0 |

! M-Mitrosodiphenylamine (1) | 10.0 |

! Ancenaphthene

! Fluorene

1 10.0 ;

1 10.0 1

10.0

Method: EPA 625 (BM Only)

Sample ID: 1080-02
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91
Date Reported: 3-19-91

	COMPOUND		Detection Limit (ug/L)	Sample Conc. (ug/L)		Q	_	* .	COMPOUND		Detection Limit (ug/L)	מכ	Sample Conc. (ug/L)		Q	)
!	bis(2-Chloroethyl) ether	!	10.0		!	U	!	1	4-Bromophenyl-phenylether	!	10.0	۰				 r _ r
!	1,3-Dichlorobenzene	!	10.0		!	U	İ	ĺ	Phenanthrene	!	10.0	1			U	
!	1.4-Dichlorobenzene	!	10.0			U		i	Anthracene	1	10.0	1			Û	•
i	Benzidine	!	40.0		i	U	İ	i	Di-n-butylphthalate	1	10.0	1			Ū	
!	1,2-Dichlorobenzene	!	10.0			Ţ	•	į	Fluoranthene	1	10.0	į I			U	
!	1.2-Diphenylhydrazine	1	10.0	•		U		į	Pyrene	1	10.0	i I			U	100
ŀ	bis(2-Chloroisopropyl) ether	1	10.0			a		i	Butylbanzylphthalate	1	10.0	i I			Ū	
1	N-Nitrosodimethylamine	1	10.0			Ũ	•	i	3,3'-Dichlorobenzidine	1	20.0	i I			U	
ļ	N-Nitroso-di-n-propylamine	1	10.0		i		•	i	Benzo(a) anthracene	1	10.0	i			Ū	
!	Hexachloroethane	!	10.0		•	ũ	•	į	Chrysene	1	10.0	i I			Ū	
!	Nitrobenzene	1	10.0		!		•	i	bis(2-Ethylhexyl) phthalate	i I	10.0	i			Ū	- 0
!	Isophorone	1	10.0		!			;	Di-n-octylphthalate	i i		i			Ū	
1	bis(2-Chloroethoxy) methane	i	10.0		:		•	;	Renzo(b) fluoranthene	i	10.0	i			Û	
	1.2,4-Trichlorobenzene	i	10.0				•	;		:	10.0	i			IJ	
1	Naphthalene	į	10.0		•	U		1	Benzo(k)fluoranthene	i	10.0	i			U	4101
!	Hexachlerobutadiena		10.0				•	1	Benzo(a)pyrene	ŀ	10.0	l			a	
i	Hexachlorocyclopentadiene	!	10.0					. !	Indeno(1,2,3-cd)pyrene	1	10.0	ŀ	•	ł	IJ	1
į	2-Chloronaphthalene	1.	10.0			J		i	Dibenz(a,h)anthracene	l	10.0	!		ŀ	Ũ	!
!	Dimethylphthalate	1					-	i	Benzo(g,h,i)perylene	!	10.0	!		!	Û	1
!	Acenapthtylene	i i	10.0			J	•									-
,	2.6-Dinitrotoluene	1	10.0			J										
ı	T'A DINITITATOININE	i	10.0		1 (	J	l									

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### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Mane: CAMO Laboratories. Inc.

Client Name: LMS

1 2,6-Dinitrotoluene

! Hexachlorobenzene

2.4-Dinitrotoluene

Diethylphthalate

4-Chlorophenyl-phenylether | 10.0 |

! N-Nitrosodiphenylamine (1) | 10.0 !

! Ancenaphthene

! Fluorene

10.0

1 10.0 | 25

! 10.0 | 13

1 10.0 1

1 10.0 |

10.0

Project/Facility Name: Bergstol

Sample Location: PP2 Matrix: Water

Method: EPA 625 (BW Only)

Sample ID: 1080-03
Date Collected: 3-6-91
Date Received: 3-7-91
Date Extracted: 3-12-91
Date Analyzed: 3-13-91

3-19-91

Date Reported:

	COMPOUND		Detectio Limit (ug/L)	n	Sample Conc. (ug/L)		Q				COMPOUND		Detection Limit (ug/L)	מס	Sample Conc. (ug/L)		Q	2
}	bis(2-Chloroethyl) ether	!	10.0	1			U	(-)	1		4-Bromophenyl-phenylether	 ¦	10.0	!		 		 J ¦
i	1,3-Dichlorobenzene	ŀ	10.0	ŀ		ļ	U	l	. 1		Phenanthrene	1	10.0	1	13	!		1
i	1.4-Dichlorobenzene	ł	10.0	1			Û		1		Anthracene	!	10.0	}		1	Ũ	1
i	Benzidine	ŀ	40.0	l		ł	U	!	1		Di-n-butylphthalate	!	10.0	!		1	U	H
i	1,2 % chlorohenzene	ŀ	10.0	-		1	U	!	!		Fluoranthene		10.0			ĺ		
1	1.2 Liphenylhydrazine	1	10.0	ŀ		!	U	l	1		Pyrene	-	10.0	i				ï
1	bis(2-Chloroisopropyl) ether	ŀ	10.0	1		!	U	!	1		Butylbenzylpht'-late	1	10.0	İ				i
ŀ	N-Nitrosodimethylamine	ŀ	10.0	!		;	U		1		3,3'-Dichlorobenzidine	i	20.0	į				i.
ł	M-Mitroso-di-n-propylamine	1	10.0	!		!	U	!	!		Benzo(a)anthracene	į	10.0	į			Û	
!	Hexachloroethane	ŀ	10.0	1		1	U		i		Chrysene	į	10.0	i				1
ŀ	Nitrobenzene	!	10.0	1		i	U	!	į		bis(2-Ethylhexyl) phthalate	!	10.0	i		1		!
!	Isophorone	!	10.0	1			U		i		Di-n-octylphthalate	1	10.0	I I		. [	Û	
i	bis(2-Chlorocthoxy) methane	1	10.0	!			U				Benzo(b)fluoranthene	1	10.0	1	*			
1	1,2,4-Trichlorobenzene	1	10.0	i			U		!		Benzo(k) fluoranthene	1	10.0	1			U	
!	Naphthalene	!	10.0	!			0		!		Benzo(a) pyrene	!	10.0	1			U	
1	Hexachlorobutadiene	i	10.0	!			0		!		Indeno(1,2,3-cd)pyrene	1	10.0	1			U	
1	Hexachlorocyclopentadiene	į.		į			O !		<u> </u>		Dibenz(a,h)anthracene	i i		İ			Û	-
!	2-Chloronaphthalene	i	10.0	į			ן טו		1			i I	10.0	i			Û	
}	Dimethylphthalate	i	10.0	!	**		ן ניי		ı		Benzo(g,h,i)perylene	i	10.0	i		i	U	i
1	Acenapthtylene	:	10.0	!			U !			-								-
	A ( n' 11		10.0	ı		!	U 1											

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### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

Page	 of	/

Project No. 535 - 005

LMS Facility: Noch

SAMPLE TYPE (Circle):

Drinking Water Industrial Waste Coliform (T) Stream/Pond River/Ocean Coliform (F)

Monitoring Wells
Treatment Facility
Other

Project:  $3c_3 + 1$ Collection
Site:  $5c_3 + 1$ Field
Personnel: TAC Tin CC

Bottom Sediment Soil

SAMPLE ID						SAMPLE	PREP
NUMBER	DATE	TIME	SAMPLE	E SITE	PARAMETERS	PRESERVA- TIVE	FILTER (Y/N)
A17145	419191	101/5	B-11		V5H 624	4°C	N
A17144	ļ	L	V			J	1
							·
				· Jan		1/2	
			· · · · •	1. /	- 1		
				200			
Relinquished B	7. EL		Date/Time:	1130	No. Bottles:	Received By:	liser
Relinquished B	y. Caldu	slu	. •		Date/Time: 4/9/9/	Received By:	
Messenger:		Shipped To	):		Received at Lab By:	Date/Time	- 11
HUGO		CAN	10		Kathy Sulliv	ar 4/9/9	1,3:20
Remarks: No.	ed ser	bul	(esulls 6	y 4/11/	9/ :		711

### SEMINOLATILE ORGANICS ANALYSIS DATA SEEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Natusky & Skelly Eng.

Project/Facility Name: Sample Location: XX-22

Matriz: Water Method: EPA 625

Ancenaphthene

; Fluorene

; 2.4-Dinitrotoluene ; 10.0 ; Diethylphthalate ; 10.0 ;

; N-Witrosodiphenylamine (1) | 10.0 |

; 4-Chlorophenyl-phenylether ; 10.0 ;

! 10.0 | 39

10.0 | 12

Simple ID: 5172-03
Date Collected: 12-11-90
Date Received: 12-12-90

Bate Extracted: 12-21-90
Date Analyzed: 12-27-90
Bate Reported: 1-10-91

			Detection	n	Sample Conc.						1	etectio	D D	Sample Conc.			
	COKPOUND		(ug/L)		(nà/P)		Ç	_		COMPOUND	(	ug/L)		(ug/L)		Q	
:	bis(2-Chloroethyl) ether	;	10.0	1			U	-		 4-Bromophenyl-phenylether	¦	10.0			!	U	- ¦
:	1.3-Dichlorobenzene	1	10.0	;		i	U	i	1	Phenanthrene	i	10.0	1		1	U	1
	1.4-Dichlorobenzene	ŀ	10.0	÷		!	U	ì	:	Anthracene	-	10.0	-		1	U	1
:	Benzidine	1	40.0	!		1	U	!	1	Di-n-butylphthalate	1	10.0	-		1	IJ	1
	1.2-Dichlorobenzene	1	10.0	;		1	U	!	1	Fluoranthene	1.	10.0	!		1	U	ł
1	1.2-Diphenylhydrazipe	!	10.0	}		1	Ū	1	Į.	Pyrene	!	10.0	1	10	ļ		1
	bis(2-Chloroisopropyl) ether	!	10.0	ł		ł	U	1	1	Butylbenzylphthalate .	1	10.0	1		!	U	1
!	M-Mitrosodimethylamine	1	10.0	!		1	U	i	:	3.3'-Dichlorobenzidine	1	20.0	1		1	IJ	1
:	N-Nitroso-di-n-propylamine	!	10.0	1		1	IJ	!	!	Benzo(a)anthracene	1	10.0	1			Ü	
į	Hexachloroethane	ŀ	10.0	;	15	ł	U	!	;	Chrysene	-	10.0	1		1	U	1
;	Nitrobenzene	;	10.0	;		}	U	1	1	bis(2-Ethylhexyl) phthalate	ŀ	10.0	1		;	IJ	;
;	Isophorone	1	10.0	;		1	U	ŀ	1	Di-n-octylphthalate	1	10.0	1		:	U	1
i	bis(2-Chloroethoxy) methane	ļ	10.0	ł		i	U	1	;	Benzo(b)fluoranthene	1	10.0	1		ł	U	1
:	1.2.4-Trichlorobenzene	!	10.0	ţ		t	IJ	!	!	Benzo(k)fluoranthene	!	10.0	!		:	U	;
1	Naphthalene	!	10.0	1		1	U	1	1	Benzo(a) pyrene	1	10.0	{		ł	ľ	1
;	Hexachlorobutadiene	ŀ	10.0	ł		1	Ũ	1	ł	Indeno(1.2.3-cd)pyrene	1	10.0	1		1	U	1
ł	Hexachlorocyclopentadiena	i	10.0	ł		;	U	1		Dibenz(a.h)anthracene	!	10.0	}		1	įſ	1
i	2-Chloronaphthalene	1	10.0	-		1	U	!	1	Benzo(q.h.i)perylene	ŀ	10.0	1		1	U	1
i	Dimethylphthalate	1	10.0	1		1	U	ŀ	-	 							-
:	Acenapthtylene	ŀ	10.0	ĺ		!	U	1									
;	2.6-Dinitrotoluene	!	10.0	1		!	U	1									
1	Hexachlorobenzene	i	10.0	1		{	U	!									

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### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Mame: CANO Laboratories. Inc. Client Mame: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Bergstol

Sample Location: BF-6

Matrix: Water Method: EPA 625

2.6-Dinitrotoluene

! Hexachlorobenzene

2,4-Dinitrotoluene

; Diethylphthalate

! 4-Chlorophenyl-phenylether | 10.0 !

! N-Witrosodiphenylamine (1) | 10.0 |

! Ancenaphthene

; Fluorene

10.0

10.0

10.0

10.0

1 10.0

10.0

 Sample ID:
 5172-04A

 Date Collected:
 12-11-90

 Date Received:
 12-12-90

 Date Extracted:
 12-20-90

 Date Analyzed:
 01-08-91

1-10-91

Date Reported:

			Detection	n (	Sample Conc.						1	Detectio	n	Sample Conc.			
	COMPOUND		(uā/P)		(ug/L)		Q		_	 COMPOUND		(ug/L)		(ug/L)		Q	
1	bis(2-Chloroethyl) ether	ł	10.0	1		!	U	i	1	4-Bronophenyl-phenylether		10.0	 ¦			U	1
;	1.3-Dichlorobenzene	1	10.0	1		i	U	1	1	Phenanthrene	1	10.0	!	20	1		!
1	1.4-Dichlorobenzene	l	10.0	1		ŀ	U	1	1	Anthracene	!	10.0	i		1	U	!
ł	Benzidine	ľ	40.0	i		1	U	ì	!	Di-n-butylphthalate	1	10.0	-		ł	U	1
1	1.2-Dichlorobenzene	1	10.0	1		!	U	1	1	Fluoranthene	1	10.0	1	240	1		!
!	1.2-Diphenylhydrazine	!	10.0	1		!	U	!		Pyrene	1	10.0	1	100	1		1
i	bis(2-Chloroisopropyl) ether	1	10.0	1		1	U	1	!	Butylbenzylphthalate	1	10.0	!		1	I	1
1	N-Nitrosodimethylamine	1	10.0	!		1	Ū	į	1	3.3'-Dichlorobenzidine	!	20.0	1		1	U	1
1	N-Nitroso-di-n-propylamine	1	10.0	!		!	U	ŀ	}	Benzo(a)anthracene	!	10.0	1	130	ł		;
!	Hexachloroethane	!	10.0	!		ŀ	U	1	1	Chrysene	1	10.0	1	130	1		ŀ
;	Nitrobenzene	1	10.0	!			U	!	1	bis(2-Ethylhexyl) phthalate	1	10.0	1		1	U	1
ł	Isophorone	!	10.0	1		!	U	!	1	Di-n-octylphthalate	1	10.0	1		1	U	1
- }	bis(2-Chloroethoxy) methane	1	10.0	1			U	ŀ	1	Benzo(b)fluoranthene	1	10.0	1	190	1		!
1	1,2.4-Trichlorobenzene	i	10.0	1		!	û	1	}	Benzo(k)fluoranthene	1	10.0	!	130	1		!
1	Naphthalene	1	10.0	1		!	Û	1	1	Benzo(a) pyrene	{	10.0	1	150	1		;
ļ	Hexachlorobutadiene	!	10.0	1		!	U	1	1	Indeno(1.2.3-cd)pyrene	1	10.0	1		1	U	1
i	Hexachlorocyclopentadiene	1	10.0	!			U	1	-1	Dibenz(a.h)anthracene	1	10.0	!		:	Ũ	!
ł	2-Chloronaphthalene	1	10.0	1		!	U	!	1	Benzo(g.h.i)perylene	1	10.0	1		1	U	1
1	Dimethylphthalate	1	10.0	-		1	U	!	-	 							
i	Acenapthtylene	ŀ	10.0	!		!	U	i									

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### SEMIVOLATILE ORGANICS ANALYSIS DATA SEEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Bergstol

Sample Location: BP-9

Matriz: Water Method: EPA 625

2.6-Dinitrotoluene

: Hexachlorobenzene

Ancenaphthene

| Fluorene

2.4-Dinitrotoluene

; Diethylphthalate

! 4-Chlorophenyl-phenylether | 10.0 |

! M-Mitrosodiphenylamine (1) | 10.0 |

10.0

10.0

10.0

1 10.0

10.0

10.0

Sample IE: 5172-05 Date Collected: 12-11-90 Date Received: 12-12-90

Date Extracted: 12-20-90

Date Analyzed: 12-28-90 Date Reported: 1-10-91

			Detectio	D	Sample Conc.						Detectio	n	Sample Conc.			
	COMPOUND		(ug/L)		(ug/L)		Q	_	 COMPOUND		(ug/L)		(ug/L)		Q	
1	bis(2-Chloroethyl) ether	!	10.0	1			U ¦		 4-Bromophenyl-phenylether		10.0			·	U	-
ł	1.3-Dichlorobenzene	!	10.0	1		í	0 ;		Phenanthrene	1	10.0	1		1	u	1
i	1.4-Dichlorobenzene	!	10.0	!		!	0 ;	1	Anthracene	1	10.0	1		-	U	1
1	Benzidine	ŀ	40.0	1		į	U ¦	1	Di-n-butylphthalate	1	10.0	1		!	U	1
1	1.2-Dichlorobenzene		10.0	!		!	T ;	{	Fluoranthene	1	10.0	1			U	
1	1.2-Dipherylhydrazine		10.0	ļ		1	T !	1	Pyrene		10.9	1		1	IJ	1
ł	bis(2-Chloroisopropyl) ether	1	10.0	!		!	U ¦	{	Butylbenzylphthalate	!	10.0	!		1	Ũ	1
1	M-Mitrosodimethylamine	1	10.0	1		1	0	1	3.3'-Dichloroberzidine	!	20.0	1			U	
1	N-Nitroso-di-n-propylamine	1	10.0	1		;	U ;	1	Benzo(a) anthracene	-	10.0	1			U	
}	<b>Eexachloroethane</b>	1	10.0	1		1	0 1	1	Chrysene	1	10.0	1		-	U	1
}	Nitrobenzene	1	10.0	í		!	0 1	1	bis(2-Ethylhexyl) phthalate	!	10.0	1			U	
1	Isophorone	!	10.0	1			U !	i	Di-n-octylphthalate	1	10.0	1			U	
;	bis(2-Chloroethoxy) methane	1	10.0	1			U ¦		Benzo(b)fluoranthene	1	10.0	1			U	
!	1.2.4-Trichlorobenzene	1	10.0	1			C !	{	Benzo(k)fluoranthene	-	10.0	1			IJ	
ì	Naphthalene	!	10.0	-	!	1	J ¦	1	Benzo(a) pyrene	!	10.0	1			U	
1	Hexachlorobutadiene	1	10.0	1		1	J ¦	}	Indeno(1.2.3-cd)pyrene	1	10.0	1			J	
1	Hexachlorocyclopentadiene	i	10.0	ŀ		1	0 ¦	1	Dibenz(a.h)anthracene	-	10.0	1			U	
1	2-Chloronaphthalene	!	10.0	1	ł	(	U ¦	}	Benzo(q.h.i)perylene	ł	10.0	1			U	
1	Dimethylphthalate	1	10.0	ł	ŀ	Į	U		 							
ł	Acenapthtylene	ŀ	10.0	1	ł	Į	J ¦									

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## SEMINOPATIBE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Bergstol

Sample Location: BP-14

Matrix: Water Method: EPA 625

! Ancenaphthene

2.4-Dinitrotoluene

| Diethylphthalate

Fluorene

4-Chlorophenyl-phenylether | 10.0

| N-Mitrosodiphenylamine (1) | 10.0 |

10.0 ;

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10.0

10.0

10.0

Sample ID: 5172-06
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

	COMPOUND		Detecti	on	Sample Conc. (ug/L)		Q		COKPOUND		Detectio (ug/L)	מ	Sample Conc. (ug/L)		Q	
į	bis(2-Chloroethyl) ether	1	10.0	;		;	U	1	4-Bromophenyl-phenylether	!	10.0			!	U	-!
i	1.3-Dichlorobenzene	1	10.0	!		i	U	1	Phenanthrene	!	10.0	i			u	-
!	1.4-Dichlorobenzene	i	10.0	i		!	U	!	: Anthracene	1	10.0	i			U	
;	Benzidine	1	40.0	1		i	U		: Di-n-butylphthalate	!	10.0	į			U	
i	1.2-Dichlorobenzene	!	10.0	!		1	U	1	: Fluoranthene	!	10.0	ì			ũ	
!	1.2-Diphen; lhydrazine	1	10.0	;		1	IJ	1	Pyrene	:	10.0	i			ũ	
;	bis(2-Chloroisopropyl) ether	!	10.0	ł		1	U	1	Butylbenzylphthalate	!	10.0	į			Ũ	
1	N-Nitrosodimethylamine	-	10.0	ł		1	U	1	3.3'-Dichlorobenzidina	i	20.0	i			Û	
1	N-Nitroso-di-n-propylamine	1	10.0	1		1	Ū	1	Benzo(a)anthracene	!	10.0	!			ũ	
ł	Hexachloroethane	!	10.0	i		ì	U	i	Chrysene	!	10.0	!			a	
:	Nitrobenzene	i	10.0	-			U		bis(2-Ethylhexyl) phthalate	!	10.0	!			a	
1	Isophorone	!	10.0	i			C		Di-n-octylphthalate		10.0	!			U	
!	bis(2-Chloroethoxy) methane	!	10.0	1		-	a	0	Benzo(b)fluoranthene	!	10.0	1			ũ	
ł	1,2.4-Trichlorobenzene	1	10.0	i			Ũ		Benzo(k) fluoranthene	!	10.0	!			U	
1	Naphthalene	i	10.0	ì			ũ		Benzo(a) pyrene	ı	10.0	!			Ū	
1	Hexachlorobutadiene	ĺ	10.0	i			Ū		Indeno(1,2,3-cd)pyrene	i	10.0	1			Û	
1	Hexachlorocyclopentadiene	:	10.0	ì			Ū		Dibenz(a.h)anthracene	ı	10.0	1			Û	
1	2-Chloronaphthalene	!	10.0	:			Ū		Benzo(g.h.i)perylene	1	10.0	1			U	
!	Dimethylphthalate	ì	10.0	į		•	ũ			1	10.0	!		i	Ų	İ
!	Acenapthtylene	!	10.0	:			0									-
i	2.6-Dinitrotoluene	!	10.0	:		•	0									
!	Hexachlorobenzene	!	10.0	!			U !									1.0
		1	20.0	1		1	V I	1								

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### SEXIVOLATILE ORGANICS ANALYSIS DATA SEZET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler, Matusky & Skelly Eng.

Hexachlorobenzene | 10.0 |
Ancenaphthene | 10.0 |
2.4-Dinitrotoluene | 10.0 |
Diethylphthalate | 10.0 |

4-Chlorophenyl-phenylether | 10.0 |

| Fluorene | 10.0 |

| M-Mitrosodiphenylamine (1) | 10.0 |

Project/Facility Name: Bergstol Sample Location: BF-17

Matrix: Water Method: EFA 625 Sample IS: 5172-07 Date Collected: 12-11-90 Date Received: 12-12-90 Date Extracted: 12-20-90 Date knalyzed: 12-28-90

1-10-91

Date Reported:

	COMPOUND		Detection (ug/L)	מ	Sample Conc. (ug/L)		Q	COMPOUND			Detection (ug/L)	D	Sample Conc. (ug/L)		Q	1
																_
;	bis(2-Chloroethyl) ether	!	10.0	;		1	0 ;	4-Bromophenyl-phenyle	ther	!	10.0			;	ľ	i
;	1.3-Dichlorobenzene	1	10.0	1		i	U ;	: Phenanthrene		1	10.0	;			u	
1	1.4-Dichlorobenzene	1	10.0	;		1	0 ;	: Anthracene		1	10.0				U	
1	Benzidine	1	40.0	!		1	U !	Di-n-butylphthalate		1	10.0	:			U	
:	1.2-Dichlorobenzene	i	10.0	1	1		0 ;	: Fluoranthene		1	10.0	i		1	U	1
1	1.2-Diphenylhydrazine	!	10.0	;			(f ;	Pyrene		l	10.0	;		•	Û	1
1	bis(2-Chloroisopropyl) ether	!	10.0	!	}		U ;	Butylbenzylphthalate		1	10.0	1		!	Ţ	1
ľ	M-Mitrosodinethylamine	1	10.0	1			U !	3.3 - Dichlorobenzidin	e	1	20.0	;		1	U	1
!	d-Nitroso-di-n-propylamine	1	10.0	1	;		۱ ا	Benzo(a) anthracene		1	10.0	:		1	U	1
i	Hexachloroethane	1	10.0	ł	;		U ¦	: Chrysene		!	10.0	!		i	U	1
ł	Nitrobenzene	1	10.0	1	1		U !	bis(2-Ethylhexyl) pht	halate	!	10.0	1		1	U	i
ł	Isophorone	!	10.0	1	1		U :	Di-n-octylphthalate		1	10.0	:			U	
;	bis(2-Chloroethoxy) methane	!	10.0	1	1		U !	Benzo(b)fluoranthene		!	10.0	;		!	U	1
!	1.2.4-Trichlorobenzene	1	10.0	i	1		0 !	Benzo(k)fluoranthene		;	10.0	!		!	U	1
ļ	Naphthalene	!	10.0	1	1		U ¦	Benzo(a)pyrene		;	10.0	;		1	U	-
1	Hexachlorobutadiene	!	10.0	1	1		U !	Indeno(1.2.3-cd)pyren	е	İ	10.0	;		!	U	1
- 1	Hexachlorocyclopentadiene	I	10.0	1	i		U !	Dibenz(a.h)anthracene		!	10.0	1			U	
1	2-Chloronaphthalene	!	10.0	1	}		U ¦	Benzo(q.h.i)perylene		;	10.0	;			J	
1	Dimethylphthalate	1	10.0	!	1		T ;									-
ļ	Acenapthtylene	!	10.0	1	}		U !									
1	2.6-Dinitrotoluene	ŀ	10.0	1	ŀ		T !									

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### SEMIVOLATILE GREANICS ANALYSIS DATA SEEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Mame: CAMO Laboratories. Inc. Client Mame: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Bergstol

Sample Location: BP-18

Matrix: Water Method: EPA 625

2.6-Dinitrotoluene

: Hexachlorobenzene

| 2.4-Dinitrotoluene | 10.0 | Diethylphthalate | 10.0 |

4-Chlorophenyl-phenylether | 10.0 |

| N-Witrosodiphenylamine (1) | 10.0 |

Ancenaphthene

| Fluorene

10.0

10.0

10.0

10.0

Sample ID: 5172-08
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

			Detectio	ם	Sample Conc.						Detection	1	Sample Conc.			
	COMPOUND		(ug/L)		(ug/L)	Ç	}	_	 COMPOUND		(ug/L)		(ug/L)		Q	
1	bis(2-Chloroethyl) ether	1	10.0	1	. 1	0		-	 4-Bromophenyl-phenylether		10.0	1		;	J	
!	1.3-Dichlorobenzene	!	10.0	1	}	U		1	Phenanthrene		10.0	ŀ		}	u	1
!	1.4-Dichlorobenzene	!	10.0	1	. 1	Į	1	1	Anthracene	ŀ	10.0	!		!	U	!
}	Benzidine	!	40.0	!	1	Ü	1		Di-n-butylphthalate	1	10.0	-		1	IJ	1
i	1.2-Dichlorobenzene	1	10.0	1	;	U		1	Fluoranthene	1	10.0	1		1	IJ	1
1	1.2-Diphenylhydrazine	!	10.0	ļ	}	Ţ	1	-	Pyrene	1	10.0	!		1.	ú	1
!	bis(2-Chloroisopropyl) ether	!	10.0	1	1	U	[ ]	- 1	Butylbenzylphthalate	1	10.0	1	-		U	
;	N-Kitrosodimethylamine	;	10.0	!	;	U	1	1	3.3'-Dichloropenziaine	;	20.0	1		1	U	1
i	K-Kitroso-di-n-propylamine	!	10.0	!	1	U	1	1	Benzo(a) anthracene	1	10.0	1		1	U	1
i	Hexachloroethane	!	10.0	!	!	U	!	-	Chrysene	!	10.0	1			IJ	
!	Nitrobenzene	!	10.0	! !	!	U	1	!	bis(2-Ethylhexyl) phthalate	1	10.0	1		!	IJ	!
;	Isophorone	!	10.0	1	1	U	1	1	Di-n-octylphthalate	1	10.0	1		!	U	1
!	bis(2-Chloroethoxy) methane	1	10.0	1	1	U	1	ł	Benzo(b)fluoranthene	1	10.0	!		:	U	!
!	1.2.4-Trichlorobenzene	!	10.0	!	!	U	!	;	Benzo(k)fluorantheme	!	10.0	!		!	U	ł
1	Naphthalene	1	10.0	1	1	U	1	1	Benzo(a) pyrene	;	10.0	!		!	IJ	1
1	Hexachlorobutadiene	ì	10.0	!	1	U	!	1	Indeno(1,2.3-cd)pyrene	}	10.0	!		į	IJ	1
ł	Hexachlorocyclopentadiene	i	10.0	1	1	Ũ	!	. 1	Dibenz(a.h)anthracene	1	10.0	!		1	Ţ	1
}	2-Chloronaphthalene	1	10.0	1	;	U	!	}	Benzo(g.h.i)perylene	1	10.0	1		;	U	1
;	Dimethylphthalate	!	10.0	ŀ	1	Û	1		 							-
i	Acenapthtylene	!	10.0	!	!	Û	!									

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## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Sample Location: BP-20 Matrix: Water

Method: EPA 625

Sample ID: 5172-09 Date Collected: 12-11-90

Date Received: 12-12-90
Date Extracted: 12-21-90
Date Analyzed: 12-28-90
Date Reported: 1-10-91

			Detection	Sample Conc.				De	etectio	n	Sample Conc.			
	COMPOUND		(ug/L)	(ug/L)	Q		COMPOUND	( t	1g/L)		(ug/L)		Q	
1	bis(2-Chloroethyl) ether	1	10.0		¦ ()	-	4-Bromophenyl-phenylether ;		10.0			 ¦	U	
!	1.3-Dichlorobenzene	1	10.0		1 0	1	Phenanthrene		10.0	1		1	u ¦	
1	1.4-Dichlorobenzene	1	10.0		1 0	1	Anthracene		10.0	1		1	<b>U</b> ¦	
1	Benzidine	!	40.0		U	1	Di-n-butylphthalate		10.0	1		1	0	
1	1.2-Dichlorobenzene	1	10.0		; U	1	Fluoranthene		10.0	1		1	0	
1	1.2-Diphenylhydrazine	1	10.0		1 0	!	Pyrene		10.0	1		!	0	
1	bis(2-Chloroisopropyl) ether	1	10.0		1 0	1	Butylbenzylphthalate ;		10.0	1		1	0	
1	N-Nitrosodimethylamine	1	10.0		; U	1	3.3'-Dichlorobenzidine		20.0	1		1	0 !	
1	N-Nitroso-di-n-propylamine	1	10.0		; T	1	Benzo(a)anthracene :		10.0	1		ł	0	
1	Hexachloroethane	1	10.0		{ U	1	Chrysene		10.0	1		!	0	
i	Nitrobenzene	!	10.0		1 0	ŀ	bis(2-Ethylhexyl) phthalate ;		10.0	!		1	0	
ŀ	Isophorone	1	10.0		; T	1	Di-n-octylphthalate		10.0	1		!	U !	
1	bis(2-Chloroethoxy) methane	1	10.0		; T	1	Benzo(b)fluoranthene		10.0	1		!	T ;	
1	1.2.4-Trichlorobenzene	ŀ	10.0		; T	!	Benzo(k)fluoranthene ;		10.0	1		!	0 !	
1	Maphthalene	1	10.0		1 0	1	Benzo(a)pyrene :		10.0	1		1	T !	
!	Hexachlorobutadiene	1	10.0		1 0	1	Indeno(1,2,3-cd)pyrene ;		10.0	1		ł	0 1	
!	Hexachlorocyclopentadiene	!	10.0		¦ 0	1	Dibenz(a,h)anthracene		10.0	1		!	0 ;	
1	2-Chloronaphthalene	1	10.0		1 0	-	Benzo(g,h,i)perylene ;		10.0	1		ł	0	
!	Dimethylphthalate	1	10.0		1 0	1	Phenol		10.0	1		1	1	
1	Acenapthtylene	1	10.0		¦ ()	1	2-Witrophenol		10.0	1		1	1	
-	2.6-Dinitrotoluene	ŀ	10.0		1 0	l	4-Witrophenol !		10.0	1		1	1	
!	Hexachlorobenzene	1	10.0		1 0	l	2.4-Dinitrophenol		50.0	1		1	1	
1	Ancenaphthene	1	10.0		1 0	l	4.6-Dinitro-o-cresol		50.0	1		1	1	
1	2.4-Dinitrotoluene	!	10.0		10	!	Pentachlorophenol		50.0	1		1	1	
1	Diethylphthalate	1	10.0		; U	1	p-Chloro-n-cresol ;		10.0	!		1	0	
!	4-Chlorophenyl-phenylether	-	10.0		{ U	1	2-Chlorophenol ;		10.0	1		1	0 !	
!	Fluorene	ŀ	10.0		1 0	1	2.4-Dichlorophenol		10.0	1		!	0 !	
1	N-Mitrosodiphenylamine (1)	ŀ	10.0		; U	1	2.4.6-Trichlorophenol {		10.0	ŀ		ł	U !	
-							2.4-Dimethylphenol		10.0	1		1	T !	

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler, Matusky & Skelly Bag. Project/Facility Name: Bergstol

Sample Location: SS-1

Matriz: Soil Method: EPA 625

Solids 77%

Sample ID: 5172-10 Date Collected: 12-11-90 Date Received: 12-12-90 Date Extracted: 12-20-90 Date Analyzed: 12-23-90

Date Reported: 1-10-91

DF = 10

	COMPOUND	Detecti Limit (uş/kş)	on Sample Conc. (ug/kg)*	Q		COXPOUND	Detection Limit (ug/kg)	on Sample Conc. (ug/kg)*	Q
!	bis(2-Chloroethyl) ether	4300.0		; U ;		4-Bromophenyl-phenylether	; 4300.0	!	0
İ	1.3-Dichlorobenzene	4300.0	1	; U ;	!	Fhenanthrene	4300.0	87.000	
!	1.4-Dichlorobenzene	1 4300.0	;	; 0 ;	1	Anthracene	4300.0	17.000	1 1
!	Benzidine	117000.0	1	101	1	Di-n-butylphthalate	4300.0	1	0
1	1.2-Dichlorobenzene	1 4300.0	}	; U ;	1	Fluoranthene	4300.0	66.000	
!	1.2-Diphenvlhydrazine	4300.0	1	0	1	Pyrene	4300.0	1 257.000	1 1
1	bis(2-Chlordisopropyl) ether	1 4300.0		101	ĺ	Butylbenzylphthalate	1 4300.U	1	101
1	N-Nitrosodimethylamine	: 4300.0	1	101	i	3.3'-Dichlorobenzidine	1 8600.0	!	101
	N-Nitroso-di-n-propylamine	4300.0	i	0	į	Benzo(a) anthracene	1 4300.0	: 68.000	
1	Hexachloroethane	4300.0	!	0	į	Chrysene	4300.0	69.000	
;	Nitrobenzene	4300.0	1	0	i	bis(2-Ethylhexyl) phthalate		!	0
:	Isophorone	4300.0	1	0		Di-n-octylphthalate	4300.0	!	0
1	bis(2-Chloroethoxy) methane	4300.0	i	1 0 1	į	Benzo(b)fluoranthene	1 4300.0	65.000	1 1
;		4300.0	1	101	;	Benzo(k)fluoranthene	1 4300.0	55.000	
!	Naphthalene	4300.0		0	:	Benzo(a) pyrene	1 4300.0	60.000	1 1
1	Hexachlorobutadiene	1 4300.0	i	101	;	Indeno(1.2.3-cd)pyrene	4300.0	22.000	
1	Hexachlorocyclopentadiene	1 4300.0	į	1 0 1	i	Dibenzía, h) anthracene	1 4300.0	!	0
!	2-Chloronaphthalene	4300.0	İ	101	!	Benzo(q.h.i)perylene	1 4300.0	17.000	1 0 1
1	Dimethylphthalate	4300.0	i	101			1 4300.0	1 17.000	1 1
!	Acenapthtylene	4300.0	į	101					
1		1 4300.0		101					
1	Hexachlorobenzene	1 4300.0		1 0 1					
ł	Ancenaphthene	4300.0	18.000						
	0 ( p' !:		,	' '					

| 4300.0 | | | | | | |

2.4-Dinitrotoluene

Diethylphthalate | 4300.0 |

! Fluorene | 4300.0 | 10.000 | | 

^{*} Dry Weight

## SEMIVOLATILE ORGANICS ANALYSIS DATA SEEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CRMO Laboratories. Inc. Client Name: Lawler. Manusky & Shelly Eng.

Project/Facility Name: Bergstol

Sample Location: SS-2

Matriz: Soil Method: EPA 628

Solids 65%

 Sample ID:
 5172-11

 Date Collected:
 12-11-90

 Date Received:
 12-12-90

 Date Extracted:
 12-20-90

 Date Analyzed:
 12-23-90

1-10-91

DF = 10

Date Reported:

			Detection Limit		Sample Conc.			
	COMPOUND		(ug/kg)		(ug/kg)*		Q	
i	bis(2-Chloroethyl) ether	;	5100.0	· ¦			U	- 1
ł	1.3-Dichlorobenzene	i	5100.0	l I		1	U	1
i	1.4-Dichlorobenzene	1	5100.0	1		-	U	1
1	Benzidine	1	20000.0	1		1	U	1
!	1.2-Dichlorobenzene	1	510.0	1		i	a	i
!	1.2-Dinhanylhydrazine		510.0	1		i	I	í
1	bis(2-chioroisopropyl) ether					!	U	1
1	N-Nitrosodimethylamine		510.0	ļ			U	i
!	N-Nitroso-di-n-propylamine	;	510.0	1		į	U	i
ŀ	<b>Eexachloroethane</b>	i	510.0	i		!	a	
!	Nitrobenzene	1	510.0	1		į	U	i
i	Isophorone	!	510.0	1		1	U	ì
1	bis(2-Chloroethoxy) methane	1	510.0	i		1	U	i
!	1.2.4-Trichlorobenzene	!	510.0	!		!	U	!
1	Naphthalene	1	510.0	1		i	U	ì
1	Hexachlorobutadiene	ŀ	510.0	1		1	Ū	1
!	Hexachlorocyclopentadiene	1	510.0	!		i	U	;
1	2-Chloronaphthalene	ľ	510.0	1		Ì	U	1
1	Dimethylphthalate	1	510.0	1		1	U	!
i	Acenapthtylene	!	510.0	1	5.000	ì		!
!	2.6-Dinitrotoluene	1	510.0	1		1	U	İ
1	Hexachlorobenzene	1	510.0	-		1	U	Ì
ŀ	Ancenaphthene	!	510.0	1		1	U	1
!	2.4-Dinitrotoluene	1	510.0	;		1	U	1
!	Diethylphthalate	!	510.0	!		1	U	i
ļ	4-Chlorophenyl-phenylether	!	510.0	!		1	U	!
1	Fluorene	1	510.0	-		!	U	1
1	M-Mitrosodiphenylamine (1)	1	510.0	1		!	U	!

		Detection	Sample			
		Limit	Conc.			
-	COKPOUND	(ug/kg)	(ug/kg)*		Q	
	4-Bromophenyl-phenylether	5100.0			U	
	Phenanthrene	; 5100.0 ;	65.000	1		
	Anthracene	5100.0	15.000	1		
	Di-n-butylphthalate	1 5100.0 1		1	IJ	
	Fluoranthene	1 5100.0	37,000	1		
	Pyrene	1 5100.0 . 1	366,000	!		
	Butylbenzylphthalate	1 5100.0		1	U	
	3.5'-Dichlorobenzidine	110000.0		!	U	
	Benzo(a)anthracene	1 5100.0 1	74.000	1		!
	Chrysene	1 5100.0 1	83.000	1		
	bis(2-Ethylhexyl) phthalate	1 5100.0 1		ŀ	U	!
	Di-n-octylphthalate	1 5100.0		1	U	!
	Benzo(b) í luoranthene	1 5100.0	60.000	!		i
	Benzo(k)fluoranthene	1 5100.0	54.000	1		!
	Benzo(a) pyrene	1 5100.0 1	68.000	1		!
	Indeno(1.2.3-cd)pyrene	1 5100.0	22.000	1		!
	Dibanz(a.h)anthracene	5100.0	6.600	1		!
	Benzo(g.h.i)perylene	1 5100.0 1	25.000	1		

^{*} Dry Weight

### SEMIVOUNTILE GREANICS ANALYSIS DATA SHIFT BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNES

Laboratory Name: CLMG Laboratories, Inc. Client Name: Lawler, Matusky & Skelly Eng.

Project/Facility Name: Bergstol

Sample Location: SV-2

Matrix: Water Method: EPA 625 Sample ID: 5172-12

Bate Collected: 12-11-90

Bate Received: 12-12-90

Bate Extracted: 01-08-91

Bate Amalyzed: 01-08-91

Date Reported: 1-10-91

			Detection	n	Sample			
			Limit		Conc.			
	CONFOUND		(ug/L)		(ug/L)		Q	
;	bis(2-Chloroethyl) ether	!	10.0	¦		 ¦	U	-
i	1.3-Dichlorobenzene	1	10.0	1		ł	IJ	!
1	1.4-Dichlorobenzene	!	10.0	ł		1	U	1
1	Benzidine	-	40.0	1		1	U	-
!	1.2-Dichlorobenzene	1	10.0	1		1	U	1
i	1,2-Giphonylhydrazine	1	10.0	1		1	U	1
1	bis(2-Chloroisopropy1) ether	1	10.0	1		1	U	1
1	N-Nitrosodimethylamine	l	10.0	1		1	Ţ	!
ť	N-Nitroso-di-n-propylamine	1	10.0	!		1	U	!
!	Hexachloroethane	1	10.0	!		;	J	;
!	Nitrobenzene	1	10.0	}		1	U	!
1	Isophorone	1	10.0	1		1	U	!
!	bis(2-Chloroethoxy) methane	1	10.0	į į		1	U	ŀ
1	1.2.4-Trichlorobenzene	!	10.0	!		1	U	!
;	Naphthalene	1	10.0	1		1	U	!
ŀ	Hexachlorobutadiene	1	10.0	1		ł	J	1
ł	Hexachlorocyclopentadiene	ł	12.0	i		1	U	!
ł	2-Chloronaphthalene	!	10.0	!		1	Ţ	-
;	Dimethylphthalate	1	10.0	!		1	U	-
1	Acenapthtylene	1	10.0	1		1	U	1
1	2.6-Dinitrotoluene	1	10.0	1		!	U	!
1	Hexachlorobenzene	1	10.0	1		!	IJ	!
1	Ancenaphthene	!	10.0	1		1	Ũ	!
1	2.4-Dinitrotoluene	!	10.0	1		1	Ü	!
1	Diethylphthalate	1	10.0	1		!	U	1
!	4-Chlorophenyl-phenylether	!	10.0	1		1	U	
ŀ	Fluorene	ŀ	10.0	1		1	U	1
ł	N-Nitrosodiphenylamine (1)	ł	10.0	1		1	U	1

	COMPOUND	(	Detectio Limit ug/Li	1	Sample Conc. (ug/L)		Q	
ł	4-Bromophenyl-phenylether	1	10.0	!		}	U	1
į	Phenanthrene	!	10.0	!		1	U	!
1	Anthracene	i	10.0	!		1	IJ	1
1	Di-n-butylphthalate	1	10.0	1		1	U	1
1	Fluoranthene	ŀ	10.0	!	55	1		1
1	Tyrene	1	iû.û	;	89	1		1
1	Butylbenzylphthalate	l	10.0	1		1	ij	!
1	3.3'-Dichlorobentidine	1	20.0	!		1	U	!
1	Benzo(a) anthracene	i	10.0	!	58	!		!
i	Chrysene	!	10.0	1	70	!		1
i	bis(2-Ethylhexyl) phthalate	1	10.0	1		ł	U	!
1	Di-n-octylphthalate	!	10.0	1		1	U	Ì
1	Benzo(b)fluoranthene	!	10.0	1	83	!		1
1	Benzo(k)fluoranthene	i	10.0	i	66	į		ŀ
ľ	Benzo(a)pyrene	1	10.0	1	89	1		1
	Indeno(1.2.3-cd)pyrene	!	10.0	1	32	1		!
!	Cibenz(a.h)anthracene	1	10.0	1		1	ľ	!
	Benzo(g.h.i) perylene	-	10.0	1	30	1		1

### SEMIVOLATILE ORGANICS ANALYSIS DATA SEED BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skeily Eng.

Project/Facility Name: Bergstol Sample Location: SW-1-B

Matrix: Water Method: EPA 625 Sample ID: 5172-13
Date Collected: 12-11-90
Date Received: 12-12-90
Date Extracted: 1-8-91
Date Reported: 1-10-91

	COMPOUND		Detection Limit (ug/L)	по	Sample Conc. (ug/L)		Õ	
!	bis(2-Chloroethyl) ether		10.0			:	U	-!
1	1.3-Dichlorobenzene	1	10.0	1		1	U	i
ļ	1.4-Dichlorobenzene	1	10.0	1			U	!
i	Benzidine	!	40.0	1		1	U	!
1	1.2-Dichiorobenzene	į	10.0	1			U	i
ŀ	1.2-Diphenylhydrazine	1	10.0	1		1	U	Ì
ŀ	bis(2-Chloroisopropyl) ether	1	10.0	1			U	i
i	N-Nitrosodimethylamine	;	10.6			!	D	1
ľ	N-Nitroso-di-n-propylamine	1	10.0	1		1	U	1
i	Hexachloroethane	1	10.0	1		!	J	!
1	Nitrobenzene	ŀ	10.0	1		!	U	!
1	Isophorone	!	10.0	1		1	IJ	1
1	bis(2-Chloroethoxy) methane	1	10.0	1		1	U	1
1	1.2.4-Trichlorobenzene	1	10.0	1		1	Û	1
i	Naphthalene	1	10.0	1		;	U	1
1	Hexachlorobutadiene	1	10.0	1		1	U	!
1	Hexachlorocyclopentadiene	!	10.0	1		1	U	!
	2-Chloronaphthalene	!	10.0	1		-	I	1
	Dimethylphthalate	1	10.0	!		!	U	!
	Acenapthtylene	!	10.0	1		{	U	!
	2.6-Dinitrotoluene	1	10.0	1		1	U	1
	Hexachlorobenzene	ŀ	10.0	}		1	U	!
	Ancenaphthene	1	10.0	1		1	U	!
	2.4-Dinitrotoluene	1	10.0	!		1	IJ	!
	Diethylphthalate	!	10.0	1		!	U	!
	4-Chlorophenyl-phenylether	1	10.0	1		1	IJ	!
	Fluorene	!	10.0	;		1	U	ŀ
	N-Nitrosodiphenylamine (1)	1	10.0	Į.		1	IJ	1

	COMPOUND	(	Detectio Limit ug/L)	ם	Sample Conc. (ug/L)		Q	
	4-Brogophenyl-phenylether		10.0	 ¦				-!
!	Phenanthrene	1	10.0	!		- 1	U	i
,	Anthracene	1	10.0	ŀ		!	U	1
1	Di-n-butylphthalate	!	10.0	!		!	U	1
!	Fluoranthene	!	10.0	!		-	U	1
1	Pyrene	1	10.0	!		1	IJ	!
	Buiyibenzyiphthalate	!	10.0	1		1	U	1
	3.3'-Dichlorobenzidine	1	20.0	!		1	U	1
	Benzo(a)anthracene	1	10.0	!		!	IJ	1
	Chrysene	;	10.0	!		!	IJ	1
	bis(2-Ethylhexyl) phthalate	1	10.0	!		1	U	1
	Di-n-octylphthalate	!	10.0	;		!	U	1
	Benzo(b)fluoranthene	1	10.0	!		1	U	!
	Benzo(k)fluoranthene	1	10.0	!		1	IJ	ŀ
	Benzo(a)pyrene	1	10.0	!		1	IJ	!
	Indeno(1,2,3-cd)pyrene	1	10.0	1		!	Ũ	!
	Dibenz(a.h)anthracene	1	10.0	!		1	U	1
	Benzo(q.h.i)perylene	1	10.0	!		!	Ű	1

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/NEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Sample Location: SW-2

Matrix: Water Method: EPA 625 

 Sample ID:
 5172-12

 Date Collected:
 12-11-90

 Date Received:
 12-12-90

Date Extracted: 01-08-91
Date Analyzed: 01-08-91
Date Reported: 1-10-91

	COMPOUND		Detectio Limit (ug/L)	D	Sample Conc. (ug/L)	2		COMPOUND		Detection Limit (ug/L)	C	ample onc. ug/L)		Q	
ŀ	bis(2-Chloroethyl) ether	1	10.0	1	; (	J	1	4-Bromophenyl-phenylether	1	10.0	1		1	۱ ۵	
1	1.3-Dichlorobenzene	1	10.0	1	1 (	J	ŀ	Phenanthrene	1	10.0	1		1	U ¦	
i	1.4-Dichlorobenzene	1	10.0	1	1 1	J	1	Anthracene	ł	10.0	1		1	U ¦	
į	Benzidine	1	40.0	1	1 (	J	i	<pre>Di-n-butylphthalate</pre>	1	10.0	1		1	T ;	
1	1.2-Dichlorobenzene	1	10.0	1	1 (	J	1	Fluoranthene	į	10.0	1	55	1	-	
1	1.2-Diphenylhydrazine	1	10.0	l	1 1	J	1	Pyrene	ł	10.0	!	89	1	- {	
-	bis(2-Chloroisopropyl) ether	1	10.0	l	[	I		<pre>Butylbenzylphthalate</pre>	1	10.0	!		1	U ¦	
1	N-Nitrosodimethylamine	1	10.0	1	1 (	J	i	3.3'-Dichlorobenzidine	ŀ	20.0	1		1	0 1	
1	N-Nitroso-di-n-propylamine	1	10.0	Í	1 1	J	!	Benzo(a) anthracene	1	10.0	!	58	1	1	
1	Hexachloroethane	1	10.0	1	1 (	1	1	: Chrysene	!	10.0	!	70	!	-	
i	Nitrobenzene	1	10.0	1	1 (	I	!	bis(2-Ethylhexyl) phthalat	ł	10.0			1	U ¦	
1	Isophorone	1	10.0	1	1 (	1	1	Di-n-octylphthalate	1	10.0	1		1	T ¦	
l	bis(2-Chloroethoxy) methane	i	10.0	1	1 (	1	!	Benzo(b)fluoranthene	ł	10.0	1	83	1	1	
ŀ	1.2.4-Trichlorobenzene	ł	10.0	1	1 0	1		Benzo(k)fluoranthene	1	10.0	1	66	1	- {	
1	Naphthalene	i	10.0	!	1 (	1		Benzo(a)pyrene	1	10.0	!	89	1	1	
1	Hexachlorobutadiene	ł	10.0	!	; (	1		Indeno(1,2,3-cd)pyrene	!	10.0	1	32	ł	- {	
l	Hexachlorocyclopentadiene	1	10.0	!	1 (	1		Dibenz(a,h)anthracene	1	10.0	1		1	0 !	
1	2-Chloronaphthalene	1	10.0	1	; 0	1		Benzo(g.h.i)perylene	!	10.0	!	30	1	1	
1	Dimethylphthalate	1	10.0	1	1 0	1		Phenol	1	10.0	!		!	U ¦	
1	Acenapthtylene	!	10.0	!	; 0	1		2-Witrophenol	1	10.0	!		1	U ¦	
!	2.5-Dinitrotoluene	l	10.0	1	1 0	1		4-Nitrophenol	1	10.0	1		!	U ¦	
1	Hexachlorobenzene	!	10.0	1	; 0	1		2.4-Dinitrophenol	1	50.0	1		1	T !	
ŀ	Ancenaphthene	1	10.0	1	† U	1		4.6-Dinitro-o-cresol	ł	50.0	1		1	0	
ŀ	2.4-Dinitrotoluene	!	10.0	1	1 0	1		: Pentachlorophenol	ł	50.0	1		-	T ¦	
1	Diethylphthalate	1	10.0	1	1 0	1		p-Chloro-m-cresol	ł	10.0	!		!	U ¦	
!	4-Chlorophenyl-phenylether	1	10.0	!	1 0	1		2-Chlorophenol	1	10.0	1		1	U !	
ŀ	Fluorene	1	10.0	1	1 0	1		2.4-Dichlorophenol	ŀ	10.0			1	0	
ŀ	N-Nitrosodiphenylamine (1)	1	10.0	1	1 0	1		2.4.6-Trichlorophenol	l	10.0	1		1	T ;	
-						-		2,4-Dimethylphenol	1	10.0	1		ŀ	T !	

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET BASE/MEUTRAL/ACID EXTRACTABLE COMPOUNDS

Laboratory Name: CAMO Laboratories. Inc. Client Name: Lawler. Matusky & Skelly Eng.

Project/Facility Name: Sample Location: SW-1-B

Matrix: Water Method: EPA 625 

 Sample ID:
 5172-13

 Date Collected:
 12-11-90

 Date Received:
 12-12-90

Date Extracted: 1-8-91
Date Analyzed: 1-8-91
Date Reported: 1-10-91

	COMPOUND		Detectio Limit (ug/L)	n 	Sample Conc. (ug/L)	Q	_		Detection Sample Limit Conc. COMPOUND (ug/L) (ug/L)	Q	)
	bis(2-Chloroethyl) ether	1	10.0	1	1	U	1	1	4-Bromophenyl-phenylether   10.0	Ū	J ¦
1	1.3-Dichlorobenzene	1	10.0	1	1	Ű	1	1	Phenanthrene   10.0	Ū	]
!	1.4-Dichlorobenzene	1	10.0	l	1	U	ì	1	Anthracene   10.0	Ū	]
!	Benzidine	-	40.0	!	1	Û	1	ł	Di-n-butylphthalate   10.0	Ū	J ¦
1	1.2-Dichlorobenzene	-	10.0	1	1	U	i	}	Fluoranthene   10.0	Ū	]
!	1.2-Diphenylhydrazine	1	10.0	1	1	U	i	1	Pyrene   10.0	Ū	]
1	bis(2-Chloroisopropyl) ether	1	10.0	-	1	U	1	1	Butylbenzylphthalate   10.0	Ū	J
1	N-Nitrosodimethylamine	!	10.0	1	1	U	1	1	3.3'-Dichlorobenzidine   20.0	Ū	]
i	N-Nitroso-di-n-propylamine	1	10.0	ł	1	U	1	1	Benzo(a)anthracene   10.0	Ū	J
ŀ	Hexachloroethane	1	10.0	1	1	U	1	!	Chrysene   10.0	U	J ¦
1	Nitrobenzene	-	10.0	1	1	U	1	1	bis(2-Ethylhexyl) phthalate   10.0	Ū	J
1	Isophorone	1	10.0	1	1	U	1	ł	Di-n-octylphthalate   10.0	Ū	]
1	bis(2-Chloroethoxy) methane	ŀ	10.0	1	{	U	1	1	Benzo(b)fluoranthene   10.0	U	1
1	1.2.4-Trichlorobenzene	1	10.0	1	1	U	1	}	Benzo(k)fluoranthene   10.0	Ū	]
1	Naphthalene	ŀ	10.0	!	1	Ū	1	1	Benzo(a)pyrene   10.0	U	1
1	Hexachlorobutadiene	1	10.0	!	1	Ţ	1	1	Indeno(1,2,3-cd)pyrene   10.0	Ū	J
1	Hexachlorocyclopentadiene	!	10.0	1	{ }	Ţ	ł	1	Dibenz(a.h)anthracene   10.0	U	1
i	2-Chloronaphthalene	l	10.0	1	1	U	1	}	Benzo(g,h,i)perylene   10.0	Ū	1 !
1	Dimethylphthalate	!	10.0	}	1 1	J	1	ł	Phenol   10.0	U	J
l	Acenapthtylene	1	10.0	1	1 1	J	1	1	2-Mitrophenol	Ū	]
1	2.6-Dinitrotoluene	1	10.0	1	11	J	ŀ	1	4-Mitrophenol   10.0	U	1
1	Hexachlorobenzene	-	10.0	1	11	J	ŀ	1	2.4-Dinitrophenol   50.0	Ū	1
	Ancenaphthene		10.0	1	{ 1	J	ŀ	{	4.6-Dinitro-o-cresol   50.0	U	1
	2.4-Dinitrotoluene	1	10.0	1	11	J	1	1	Pentachlorophenol   50.0	Ū	J ¦
	Diethylphthalate	1	10.0	!	1 (	J	1	1	p-Chloro-m-cresol   10.0	U	1
	4-Chlorophenyl-phenylether	1	10.0	1		J	ŀ	1	2-Chlorophenol   10.0	Ū	]
	Fluorene	í	10.0	1	1 (	J	1	{	2.4-Dichlorophenol   10.0	U	1
	N-Nitrosodiphenylamine (1)	1	10.0	1	1 1	J	1	1	2.4.6-Trichlorophenol   10.0	Ũ	1
							•	ł	2.4-Dimethylphenol   10.0	U	J

			.7
Page	1	of	
J			

ii a				SKELLY ENGINEERS STODY RECORD	Page _	of $\frac{3}{2}$
PROJECT No.	535	005			PII SAM	419
LMS FACILIT	1 N X Y	7CK		COLLECTION SITE DER	(USTO)	
SAMPLE TYPE		:	am/Pond Monitori		). K., JA(	JFC
Industri	al Waste (T/F	Rive	r/Ocean Treatmen	t Facility Soil		
	1	!	I I	1	SAMPLE	
SAMPLE ID NUMBER	l DATE	! ! TIME	SAMPLE SITE	PARAMETERS	PRESERVA-	FILTER (Y/N)
V. 15 122 Vg 16 090	12./11/10	0935	MW-202		400	N
27232				B/\ *		
37246		1	<b>V</b>	TPH	1175041	1
V, 15069		1045	MW-223	VOA' 624 *		
77327				BN *	\	
3-79-17		V	1	TPH.	1-15 (64)	
<u>ξωση</u> ν, π.εξη		1330	BP-9 5	VOA: GAMX		
27237				BN *		
27243				TFH	Hasou	
V. 16083 V216087		1355	BP-14 6	VOA 624 *		
07335				BX *		
37239		1	<b>\</b>	TPH	H2504	
V2 16 088		1430	BP-18 /	VOA'S 624"		
15079				BN Y		
15076		<b>V</b>	1	TPH	142504	

1505 FIRID BLANK WOAS 624* 7 16091 Received By: Date/Time: 1800 No. Bottles: Relinquished By: 1). I-CASSELL

1/ 16071

Date/Time: 12/17/40 Received By: Relinquished By: Date/Time: Received By: Relinquished By:

Shipped To: Messenger:

1450 Remarks: FIUS-15 FCR BN-VOA'S 624

> One Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300

Sample Drop-Off: 53 Hudson Avenue; Myack, New York 10960

### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

Page	7		o f	3	
JŘ r Ál	8	- n	01 1/17	FF	7

PROJECT	No.	5	3	5	·(	005	
PROJECT	No.	5	3	5		05	

LMS FACILITY NYACK

Well SAMPIR PROJECT

COLLECTION BER65TOI SITE

FIELD JFC PERSONNEL

SAMPLE TYPE (Circle):

Drinking Water Industrial Waste Coliform (T/F)

Stream/Pond River/Ocean Leachate

Monitoring Wells Other Sepiment

Bottom Sediment Soil

1				· · ·					
CAMPE	i			1	SAMPLE	PREP			
SAMPLE				1	PRESERVA-	FILTER			
ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	TIVE	(Y/N)			
V2-15078	12/11/16	1510	MW-18 1	VOAS 624 * .	400	N			
27234				BN625					
27230		1		TPH	H2504	1			
1V, 15123 ;	1	1530	BP-6-1	1 VOAS 624 *					
27238				BN 625		: .			
97245			<b>V</b>	TPH	1+2504				
V. 15091 V2 15092		1417	5h-1-B 13	624 ×		1 1			
16097				BN-625*					
13209	<i>*</i>	*	<b>1</b>	TPH	+72504	1			
V1 17131 1		1440	5W-212	624 *					
19186				Bx 625 x					
16096		$\downarrow$	$\downarrow$	TPH	H2504				
V. 16094 1		1570	55-2 11	624 *					
27241		1	<b>V</b>	625'					
77139		<b>y</b>	· ·	TPH					
V, 16318 ;	*		TRIP BLANK	624+15	<b>V</b>	Y			
Relinquished By: Date/Time:			Date/Time: 1800	No. Bottles: Received By:					
Relinquished By:   Date/Time:   Received By:   12/17/80									
Relinquished By: Date/Time: Received By:									
Messenger:	Messenger:   Shipped To:   Received at Laboratory By:					シカニ			
Remarks (x + 15 FOR 624 & BX)									

One Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300

Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

### LAWLER, MATUSKY & SKELLY ENGINEERS CHAIN OF CUSTODY RECORD

PROJECT No. <u>535</u>-005

LMS FACILITY NXACK

Page  $\frac{2}{3}$  of  $\frac{3}{3}$ 

LURII SAMFIF SURFACE LUATER

BERGSTOI

PROJECT COLLECTION

SITE

FIELD

SAMPLE TY	PE (Circle	e):		PERSONNEL	D. K. Je €	2
Drinkir	ng Water	Str	eam/Pond (Monitor	ing Wells Bottom Sedir		_
Industrial Waste River/Ocean Treatment Facility Soil						
Colifor	cm ( T / F	) Lead	chate Other	FD:MPNT		
I CAMPER	į			1	SAMPLE PREP	
SAMPLE LID NUMBER	i				PRESERVA- FILT	er :
V. 16070		TIME	SAMPLE SITE	PARAMETERS	TIVE (Y/N)	:
V2 16086	12/11/9	1450	BF-17 1	624+15	HOC X	;
2.7228			}	BN-625+15.		
27231	1		1	TPH		_
16097	Let E	11675	SS-1 10	624+15		i
20111	1	100.		45 () 1)		<u></u> ¦
27244		-		BN-625 +15		i
27140	1	V		TPH		: ;
142-16076		1615	B1-209	624+15		
27233				BX-625+15		
27240			V		Hason (	
1						_
, 	I I I	<del></del>				<u> </u>
, A	i!	<u>i i</u> ¦ ¦	2	- 7		_
				<u> </u>	11 Sec. 15	_
						_
				· · · · · · · · · · · · · · · · · · ·		
		:				<u>)</u>
Relinquished By: Date/Time: No. Bottles: Received By: 12/11/90 1866						
Relinquishe	Relinquished By:   Date/Time:   Received By:					
Relinquished By: Date/Time: Received By:						
Messenger:   Shipped To:   Received at Laboratory By:						
HUMO Rathy Sullawoon 12/12						
Remarks:			71-60	received Occasion	The same	
				\$ 1 · 11 · 1		

One Blue Hill Plaza, Pearl River, New York 10965 (914) 735-8300



# CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > February 4, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John F. Eisenhardt Laboratory Director

REC'D QAS

FEB 0 6 1991

CAMO LABORATORIES, INC 367 VIOLET AVENUE

POUGHKEEPSIE, NEW YORK 12601

(914) 473-9200

FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Attn: QA Department

LMS Project No.: 535-005

Date of Invoice:

Sample Identification

(01) Tunnel #1

2-4-91 27204

P.O. #: Typed by:

mlj

Invoice #:

91-01-0423

Analytical Report

Date Samples Collected: 1-18-91 Date Samples Received:

Samples Collected By:

Samples Delivered By:

Matrix:

1-30-91 Client

Federal Express

Water

Unit/

Parameters

Measure

(01)

Method 624 & Xylenes

Analysis Comments

*See Attached Report.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

Laboratory Name: CAMO Laboratories, Inc.

Client Name: LMS

Project/Facility Name: Bergstol

Sample Location: Tunnel #1

Sample ID: 0423-01

Date Collected: 1-18-91

Date Received: 1-30-91

Date Analyzed: 1-30-91

Matrix: Water

Method: EPA 624 Date Reported: 2-4-91

	COMPOUND	Detection Limit (ug/L)	Sample Conc. (ug/L)	Q
1	Chloromethane	10.0	1	U
!	Bromomethane	10.0	1	U
1	Vinyl Chloride	10.0	1	U
- {	Chloroethane	10.0	[	U
-	Methylene Chloride	5.0		} U
- {-	Trichlorofluoromethane	5.0	1	U
	Trans-1,2-dichloroethylene	5.0		U
1	1,1-Dichloroethene	5.0	1	U
1	1,1-Dichloroethane	1 5.0	1	U
1	Dichlorodifluoromethane	5.0	1	U
1	Chloroform	5.0	}	U
1	1,2-Dichloroethane	5.0	1	U
1	2-Chloroethylvinyl Ether	10.0		U
1	1,1,1-Trichloroethane	5.0	1	U
1	Carbon Tetrachloride	1 5.0	1	U
1	Bromodichloromethane	5.0	1	i Ü i
1	1,2-Dichloropropane	5.0		U
1.	cis-1,3-Dichloropropene	5.0	1	U
1	Trichloroethene	5.0		U
1	Dibromochloromethane	5.0	1	U
1	1,1,2-Trichloroethane	5.0	}	U
1	Benzene	5.0	1	U
-	trans-1,3-Dichloropropene	5.0	1	U
1 .	Bromoform	5.0	{	U
1	Tetrachloroethene	5.0	1	U
-	1,1,2,2-Tetrachlorethane	5.0	1	ן ט ן
1	Toluene	5.0	İ	U
1	Chlorobenzene	5.0	Security	ן טן
1	Ethylbenzene	5.0	1	U
1	Acrolein	100.0	Received	ן טן
1	Acrylonitrile	100.0	1.	ן טן
1	Total Xylene(s)	5.0	Laboratory	ן ט ן



# CAMO LABORATORIES, INC.

SERVING INDUSTRY, UTILITIES, MUNICIPALITIES AND REGULATORY AGENCIES SINCE 1975

POUGHKEEPSIE AREA FACILITY: 367 VIOLET AVENUE POUGHKEEPSIE, NY 12601

> (914) 473-9200 FAX 914-473-1962

> > March 7, 1991

Dear Client:

Enclosed please find your sample results and our invoice services rendered.

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA "Approved Methods".

If you have any questions, please do not hesitate to contact us.

We hope our services are to your satisfaction and we look forward to doing future business with you.

Very truly yours,

CAMO LABORATORIES, INC.

John)F. Eisenhardt Laboratory Director

REC'D QAS

CAMO LABORATORIES, INC 367 VIOLET AVENUE POUGHKEEPSIE, NEW YORK 12601 (914) 473-9200 FED. I.D. #14-1725654 NYS LAB ID NO.: 10310

QA Department

Lawler, Matusky & Skelly Engineers

53 Hudson Avenue

Nyack, New York 10960

Date of Invoice:

P.O. #:

3-4-91 27260

Typed by:

mbb

Invoice #:

91-02-0722

LMS Project No.: 535-005

Project: Bergstol

Analytical Report

Sample Identification

(01) - (19) See Attached

Date Samples Collected: 2/7, 2/8, 2/12/91

Date Samples Received:

Samples Collected By:

Samples Delivered By:

Matrix:

2/14/91 Client Hugo

Water

Unit/

Parameters

Measure

(01) - (19)

See attached

Analysis Comments:

* See attached tables.

Comments:

All samples will be discarded after twenty-one (21) days or EPA Holding time, whichever is shorter, unless we are

notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods:

All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

		Method 624	 ¦ BN :	 ¦ % Solids
FARANETERS	//		<i>i</i> !	i !
	11	!	/ ======= /	=======   
' (02) B/P - 11	; ; ; ;	*	; !	; ; ,
(03) MW - 18	; ; ; ;	*	/ / *	; ;
(04) MW - 18 -Sampled with pump	i i !!	*	;	; ;
(05) MW - 20	; ; ; ;	*	; !	/ /
(06) MW - 22	i i 	*	;	; ; ,
(07) W.S. # 3		*	; ; !	;
(08) W.S. # 5	!!	*	; ! !	;
(09) W.S. # 6		*	; ; ;	; ; ;
(10) W.S. # 7	! ! ! ! ! !	*	; ! !	   . 
(11) W.S. # 8	! ! ! ! ! !	*	! !	; ! !
(12) W.S. # 9	! ! ! ! ! !	* .	; ; ;	; ; ;
(13) SS # 1	!	*	; ! !	;
(14) SS # 2	; ; ; ; ; ;	*	;	;
(15) SS # 3	i i !	*	,	; ; 83
(16) SS # 4		*	, !	; ¦ 89
(17) SS # 5		*	; ! *	; ; 83
(18) SS # 6	i i ! ! ! !	*	;	; ; 86 ;
(19) SS # 7	i i	*	!	;