546022

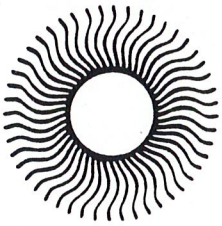
Report

Preliminary Site Evaluation:

Saratoga Research and Development Center and Wright Malta Corporation Malta, New York

T

Exhibit T
continued



New York State Energy Research & Development Authority
Albany, New York

January 1986

O'BRIEN & GERE

1848.002

REPORT

PRELIMINARY SITE EVALUATION
SARATOGA RESEARCH AND DEVELOPMENT CENTER
AND
WRIGHT - MALTA CORPORATION
MALTA, NEW YORK

JANUARY, 1986

O'BRIEN & GERE ENGINEERS, INC.
1304 BUCKLEY ROAD
SYRACUSE, NEW YORK 13221

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PRELIMINARY SITE EVALUATION:
SARATOGA RESEARCH AND DEVELOPMENT CENTER
AND
WRIGHT-MALTA CORPORATION
MALTA, NEW YORK

Introduction

Preliminary site evaluations were performed for the New York State Energy Research and Development Authority's (NYSERDA) Saratoga Research and Development Center (SRDC) and the adjacent Wright-Malta Corporation Property (Wright-Malta site). The purpose of the evaluation was to: 1) determine the source of elevated volatile organics detected within the groundwater at the Wright-Malta site and 2) identify any other areas that could have a potential impact on the environment. Information used for the evaluation included:

1. historical information supplied by NYSERDA and Wright-Malta Corporation regarding the properties.
2. data and information contained in the 1981 Engineering Planning Study prepared for NYSERDA by C. T. Male of Schenectady, NY;
3. recent analytical results of groundwater samples collected by the New York State Department of Health (NYSDOH) in the Spring of 1985;
4. a site visit on May 22, 1985 by O'Brien & Gere in conjunction with personnel from NYSERDA, NYSDOH and the New York State Department of Environmental Conservation (NYSDEC); and

5. additional telephone conversations with state personnel and others familiar with the site.
6. an examination of historical aerial photographs available from 1952 to 1982.
7. a field reconnaissance on August 7-8, 1985 by O'Brien & Gere.

Review of Previous Studies

Historically, the Wright-Malta site was used as a rocket motor and fuel testing facility. The property still contains gantries, concrete cooling water pits, concrete observation bunkers, and reinforced access hatches to subsurface pipes carrying gases (i.e. O_2, N_2).

A variety of chemicals have been discovered either buried or on storage pads in the northeast portion of the Wright-Malta site and are described in the Engineering Planning Study by CT Male Associates. These disposal areas are designated D1, D2, D4, D5, and D6 on the attached figure. D1 was an open burning pit, D2 was designated an active waste dump, and D4 and D5 are inactive container burial sites. D6 is an area where a recent excavation uncovered a drum of waste material associated with previous rocket fuel research. Wright-Malta personnel knew of no other drum disposal within this area.

A private water system serving the SRDC and the Wright-Malta site is owned and operated by Wright-Malta Corporation. An environmental concern on the Wright-Malta site is the apparent contamination of the Wright-Malta wells No. 1 and No. 2, by chlorinated organic compounds. The NYSDOH has reported analytical results as follows (ug/l):

	Tap Water	Well #1	Well #2
chloroform	14	4	25
carbontetrachloride	220	25	220
trichloroethylene	59	13	120
dibromochloromethane	3	LT 1*	LT 1*

*LT = Less than analytical detection limit.

The tap water was collected from a washroom tap in the NYSERDA office adjacent to the Wright-Malta site. The concentrations of contaminants place the water supply in contravention of the NYSDOH Commissioner's guideline limit of 50 ug/l for any one chlorinated organic compound or 100 ug/l for any chlorinated organic compounds in combination. Additional analyses for benzene, toluene and xylene (BTX) by the NYSDOH indicated no detectable concentrations of these compounds in the NYSDOH samples. The presence of BTX is often indicative of contamination by a petroleum hydrocarbon source.

Reviews of known historical site information do not present sufficient information from which to ascertain a well defined source of the contamination. Interviews with a former employee at the Wright-Malta site indicated use of trichloroethylene for cleaning metal parts, at a volume usage of 1-55 gallon drum every 3 months. The waste solvent was spent on the ground and allowed to evaporate, a common practice at the time.

Site Visit

On May 22, 1985, a site visit and tour of the properties was conducted by Larry Pakenas and John Baumgarten of NYSERDA; Stuart Spiegel of O'Brien & Gere Engineers; Brian Fear and Gary Litwin of the

NYSDOH; and Ray Cowen of the NYSDEC. All the tenants of the properties were visited except for the relatively recent building containing a General Electric research facility, located at the entrance to the SRDC. Interviews with a representative each of Wright-Malta Corporation, Mechanical Technologies, Inc. (MTI); and Power Technologies, Inc. (PTI), the three companies occupying or abutting the former rocket test site, do not indicate any present activities which would account for the contamination. In addition to a thorough tour of the Wright-Malta site and the grounds and buildings of MTI and PTI, several side roads and wooded areas on the SRDC property were investigated. Logging roads, some of which are in a condition which indicates some regular use, criss-cross the SRDC property and allow access from off-site. A dirt road which surrounds the Wright-Malta site outside the fence line was followed by car, while another road which enters the paved access road from the south was investigated on foot for 1/4 - 1/2 mile. There were no observations of activities or suspicious areas which could have a bearing on the present contamination concerns. A small mound was reported and investigated off the access road to PTI. Although no detailed investigation was conducted, the mound appears to be located along an old fence line, and may be either natural, or due to earth moving activities.

An apparent construction debris disposal site, (Map Reference D3) first located by NYSDOH personnel, also was investigated. The site is situated in a ravine south of a clearing, on the south side of the SRDC'S primary access road, about a quarter mile from the SRDC entrance. Debris (primarily concrete) protrudes from the hillside. A spring which emerges from the toe of the hill has stained the surround-

ing growth orange. Two samples were collected for laboratory analysis, one of the spring water and one of the humic material/sediment. The analytical results were (mg/l or ppm):

Metal	Spring	Humic Material/Sediment (wet weight)
iron	148	28,000
manganese	27.8	395
lead	1.06	5.9

Since the ambient concentrations of iron in iron-rich groundwater of some upstate New York sources is only about 10 mg/l, it is probable that these metal concentrations result from an other than natural source, i.e. the buried debris.

The site visit has resulted in several observations, particularly on the Wright-Malta site:

mined and cannot be inferred.

1. there is a machine shop on the Wright-Malta site which was not examined in detail. It is not known whether there are any activities at this shop which could have resulted in the present contamination.
2. a review of the Wright-Malta "tank farm" (as it is called by employees), consisting of used, inactive and obsolete metal parts and metal drums, resulted in the finding that several drums contained liquid. Some of the empty drums were labelled "mineral spirits" (naphtha) and "freon". The exact nature of the drum liquids is not known, the manner of disposal of the contents of the now empty, labelled drums is not known, the possible previous contents of the remaining empty, unlabelled drums are not known. The relationship between these barrels and the contamination is not known.

3. One of the gantry test areas on the Wright-Malta site stored containers of "GE Silicones". These compounds may contain or be used in conjunction with solvents.

4. In that portion of the Wright-Malta site where the D2, D4 and D5 disposal areas were located, there are several areas where vegetation characteristics change abruptly and/or the ground is unexpectedly even. These could be the locations of the 1981 hydrazine burning/disposal (performed in conjunction with the NYSDEC and NYSDOH) pits, routine earth moving, natural occurrences in the sandy soil, or the location of other disposed materials.

5. Wright-Malta land disposes some wastes in pits; in one such pit which was passed during the site visit, only general trash was observed. No pit liner material was observed in the disposal area, which is located in sandy soil. It is not known whether Wright-Malta has a permit for these activities as conducted, or the extent, type and quantity of materials which have been deposited in this area.

Hydrogeologic Conditions

The geologic conditions of the SRDC and the Wright-Malta site and described in the Engineering and Planning Study by CT Male and are characterized by at least 200 feet of unconsolidated deposits overlying bedrock. Test boring logs indicate that the unconsolidated deposits are composed of stratified sands which overlie a blue gray clay layer which occurs at a depth of approximately 140 feet. The sand deposit contains

a gravelly layer between 60 and 80 feet that serves as an aquifer which is the source of groundwater to the supply wells on the Wright-Malta site.

The existing water supply system serving SRDC and the Wright-Malta site consists of three drilled wells that provide an average water supply of about 10,000 GPD and a peak supply of 30,000 GPD. The water is used primarily for domestic purposes. Well No. 1 is 82 feet deep with a 20 foot steel well screen at the bottom of the well and was rated at a 30 GPM capacity. Well No. 2 is 86½ feet deep with an 8 feet well screen at the bottom and also rated at 30 GPM capacity. Well No. 3 is 76½ feet deep with a 10-foot well screen at the bottom. This well has been out of service for the last several years.

Groundwater in the area occurs at a depth of about 40-50 feet below the land surface. Water level measurements taken by Thomsen Associates (from documents supplied to O'Brien & Gere by NYSERDA) reveal that the regional groundwater flow is predominantly in a south westward direction towards Round Lake. However, localized groundwater divides may occur between Wells W1 and W2 and between the waste disposal sites and W3. Water samples have been previously collected and analyzed from the on-site water supply system by C. T. Male Associates, P.C. and by the NYSDOH as previously summarized.

The groundwater analyses (summarized in Table 1 accompanying) indicate that the highest levels of volatile organic compounds were detected in the supply from Well No. 2 including: carbon tetrachloride (220-540 ug/l), trichloroethylene (120-230 ug/l) and chloroform (25-58 ug/l). The volatile organic compounds were detected in the groundwater at considerably lower concentrations in Well No. 1 and Well

No. 3 which are located downgradient from Well No. 2 at distances of 500 and 900 feet, respectively. Variations in concentrations of carbon tetrachloride and trichloroethylene in tap water samples and samples from Well No. 2 may be due to the effect of groundwater withdrawal on the contaminant plume. In effect, higher concentrations of contaminants may be drawn to the well by the localized cone of depression formed by well water withdrawal.

In addition to the trace organic analyses, the NYSDOH and C.T. Male performed heavy metals determinations. The results are presented in Table 2. There has been no apparent indication as to a source for the elevated level of mercury in Well No. 1; solder at pipe joints and fittings may be the source of the chromium which was found in the distribution system but not in the well supplies.

Aerial Photographic Analysis

A detailed examination of historical aerial photographs was conducted to document any changes over time that may have occurred at the SRDC and/or the Wright-Malta site. In particular, the photos were reviewed to identify historical activity of the disposal areas within the Wright-Malta site and 2) identify any disturbed areas within SRDC, if any, that may contain buried sources of contamination. The aerial photographs reviewed include the following:

Date	Source
4/16/52	US Geological Survey
6/5/61	US Department of Agriculture
8/15/68	US Department of Agriculture
4/23/78	US Geological Survey
6/15/82	US Department of Agriculture

Based on the examination of the historical aerial photographs, the following observations were noted:

1. The open burning pit (Map Reference D-1) appears as an active area on all aerial photographs, indicating materials were disposed of at this area prior to 1952.
2. The Waste Dump (Map Reference D-2) which was used for the disposal of nonsalvagable, readily burned material, appears as a clearing with little, if any, activity during 1952 and 1961. However, the site appears as an active disposal site on the 1968 photograph.
3. The disposal site (Map Reference D-3) which is situated along the SRDC primary access road appears as a cleared area on the 1952, 1961 and 1968 aerial photographs. Disposal activities are apparent on the 1978 and 1982 photographs.
4. The "Container Burial" (Map References D-4 and D-5) sites where drums containing various chemicals were punctured, ignited and buried appear as disturbed areas on all aerial photographs examined, indicating that these areas were active prior to 1952.
5. In addition to the disposal site along the access road (Map Reference D3) the only disturbed areas on the SRDC property appear to be the General Electric facility along the primary access road and the impoundment north of the Wright-Malta Corporation. Both of these areas are shown on the most recent aerial photos but are not identified on any of the aerial photos prior to 1978.

Field Reconnaissance

On August 7 and August 8, 1985 a detailed field reconnaissance of the SRDC was performed by John C. Tomik of O'Brien & Gere to identify to the extent possible any disturbed areas that may contain buried waste materials. The field reconnaissance included walking along all logging trails that are accessible from the main access road. In addition, using Well No. 3 as a reference point several radial lines were walked across the property using standard compass and pace techniques.

The following observations were noted from the field reconnaissance:

1. The disposal site (Map Reference D-3) located on the southwest side of the primary access road, approximately one quarter of a mile from the SRDC entrance, consisted of approximately 30 feet of fill within a ravine. Leachate seeps were apparent at the base of the fill which where discharging iron-stained water into a stream that flows southwest of the fill area.
2. An impoundment was identified just north of the access road to Power Technologies, Inc. The impoundment was approximately 50 feet x 50 feet in size, about 10 feet deep and contained approximately 1 foot of standing water with considerable algae growth. The impoundment was partially covered with a synthetic liner and was underlain by sandy soils.
3. Along a logging tail, about 1/2 mile east of the SRDC entrance and 900 feet northeast of the primary access road

scattered debris including bottles, cans, and brush was identified; however, no fill areas were apparent.

4. Several cleared areas were noted along a logging trail south of the main access road approximately 0.8 miles from the SRDC entrance. However, each of these cleared areas contained only brush and cut logs with no apparent fill material.
5. The SRDC property is heavily wooded with mixed pine and hardwood trees. Besides the disturbed areas mentioned above, no other cleared areas used for the disposal of waste materials were apparent from either the field reconnaissance or the aerial photograph analysis.

Conclusions

Based on the preceding observations and the hydrogeologic conditions at the two properties, it is believed that the most likely source(s) of the elevated volatile organics detected within the groundwater include either Wright-Malta Corporation's drum storage area northeast of Well 2 or in disposal sites D2, D4, and D5 east of Well 2 on the Wright-Malta site. This conclusion is based on:

1. At disposal sites D-4 and D-5 drums containing various chemicals were punctured, ignited and buried during the 1950's and 1960's.
2. The drum storage area which contains waste solvent drums, is hydraulically upgradient to Well 2 and is in close proximity to Well 2.

3. The hydrogeologic conditions indicate that the aforementioned sites are hydraulically upgradient to Well No. 2.

In addition to the areas identified above, other potential sources of groundwater contamination may include:

1. the disposal area (Map Reference D3) located along the primary access road;
2. the impoundment to the north of the Wright-Malta site; and
3. the small mound located adjacent to PT1.
4. site D6 where a drum of waste material from previous rocket fuel research has been identified.

Recommendations

Based on the conclusions of the report, a two-phase field investigation is recommended.

Phase I - The initial phase of the field investigation would involve a magnetometer survey of the disposal sites D2, D4, D5, D6, the disposal area along the primary access road, and the small mound adjacent to PT1. The magnetometer survey would be used to identify the limits of buried metallic materials, including drums, at each of the disposal sites identified above. Any positive indication of metallic materials will be hand excavated to the extent possible. In addition excavation with a backhoe may be recommended then. The magnetometer survey is an inexpensive, method of locating buried drums that may serve as a continuing source of contamination. However, this method would not prove successful for identifying other sources such as evaporative pits where solvents were spilled into the sandy subsoil. As such, water samples from the seepage at the base of the disposal area along the

primary access road and from the impoundment will be collected and analyzed for organic contaminants. The samples will be filtered to remove any humic material that may impact the organic analysis.

Phase II - Following the completion of the Phase I investigation, it is recommend that a hydrogeologic field investigation be conducted to: 1) identify the source of the volatile organic compounds detected within the water supply wells, and 2) determine groundwater quality impacts, if any, from the disposal site along the access road, the impoundment north of the Wright-Malta site, and the small mound adjacent to PTI. In addition, this investigation would serve to: characterize the subsurface geologic conditions, and delineate groundwater flow patterns, including the identification of any groundwater divides on-site. Due to the high potential that one or more of the areas identified preceding may be the source of contamination, it is recommended that test borings be drilled and groundwater monitoring wells be installed immediately downgradient from these sites.

It is recommended that six wells be installed, one downgradient to each of the following sites: 1) disposal site D-4, 2) disposal site D-5, 3) disposal site D-6, 4) above ground drum storage area, 5) disposal site D-3 along access road, 6) the impoundment north of the Wright Malta site. In addition, one well should be installed upgradient to establish groundwater flow directions and provide background soil and groundwater samples. Following the completion of this field investigation, recommendations will be provided to identify if additional wells are needed to further evaluate groundwater flow or to define the downgradient extent of the volatile organic contamination.

Each of the seven wells should be installed by initially drilling a test boring using the mud rotary drilling method. During the drilling soil samples should be collected at every five feet or change in material using a split spoon soil sampler (ASTM Method D-1586). The test borings are to be installed to the base of the sand and gravel aquifer that supplies water to the on-site wells, which is estimated to occur at 90 feet. Following soil sample collection each soil sample should be screened in the field for volatile organics using an HNU photoionization meter and Draeger air sampling tubes. A portion of each soil sample should be placed into a NYSDOH approved, glass tube with Teflon stopper and crimped cap that provides an air tight seal for the soil sample tube. Based on the results of the field screening, three samples should be selected from each test boring for more detailed analysis.

Following the completion of the test borings, a groundwater monitoring well should be installed at each test boring location. Each monitoring well will be constructed of 2-inch diameter, flush jointed, PVC casing and well screen. The well screen interval would be based on the results of the field screening. The annular space between the borehole and the well screen should be gravel packed. A bentonite/cement grout should be placed within the annular space above the well screen and extend to the ground surface.

Tables

O'BRIEN & GERE

TABLE 1

WATER ANALYSES
SARATOGA RESEARCH AND DEVELOPMENT CENTER
AND
WRIGHT-MALTA SITE

(all concentrations in micrograms per liter)

Location	Source	Date	Carbon Tetra-chloride	Trichloro-ethylene	Chloroform	PCB
Tap	CT Male	3/28/85	440	130	51	1.3
Tap	NYSDOH	4/22/85	220	59	14	--
Tap	CT Male	4/12/85	630	100	31	<0.15
Well No. 1	CT Male	4/12/85	29	13	2.7	0.16
Well No. 1	NYSDOH	4/22/85	25	13	4	--
Well No. 2	CT Male	4/12/85	840	230	58	0.18
Well No. 2	NYSDOH	4/22/85	220	120	25	--
Well No. 3	CT Male	4/12/85	<2	3.6	1.3	0.7
Well No. 4	CT Male	4/12/85	2.0	1.0	1.0	<1

TABLE 2
HEAVY METAL ANALYSES
SARATOGA RESEARCH AND DEVELOPMENT CENTER
AND
WRIGHT-MALTA SITE

(all concentrations in milligrams per liter)

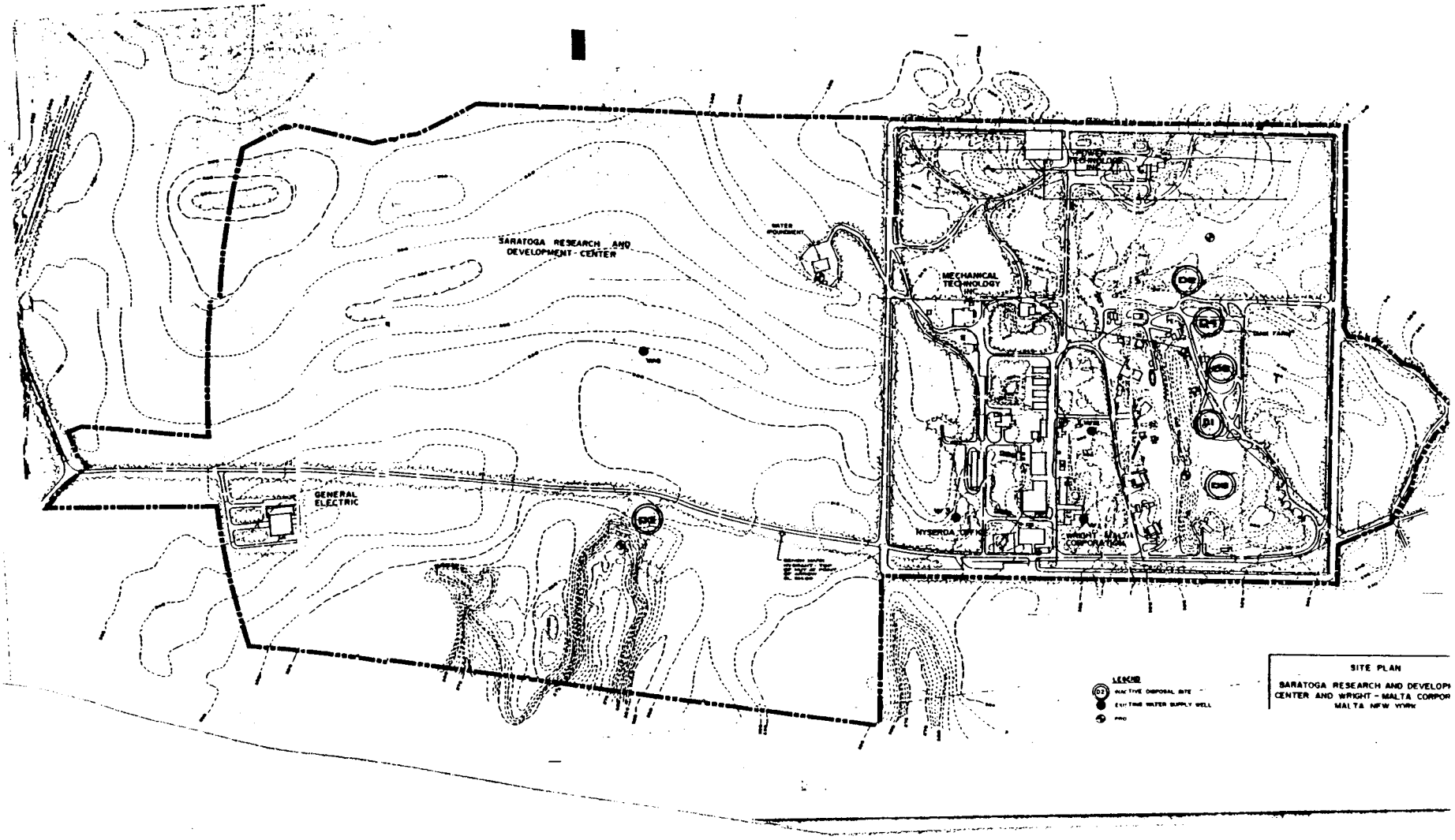
	Well No. 1		Well No. 2		Tap	
Metal	NYSDOH	C.T. Male	NYSDOH	C.T. Male	NYSDOH	C.T. Male
lead	0.025	--	ND	--	ND	LT 0.01
barium	ND*	--	ND	--	ND	LT 0.5
silver	ND	--	ND	--	ND	LT 0.01
mercury	0.085	--	ND	--	ND	
selenium	ND	--	ND	--	ND	LT 0.001
arsenic	ND	--	ND	--	ND	LT 0.005
chromium	ND	--	ND	--	0.018	LT 0.01
copper	0.09	--	ND	--	ND	
cadmium	ND	--	ND	--	ND	0.003
boron	--	0.020	--	0.099	--	0.082

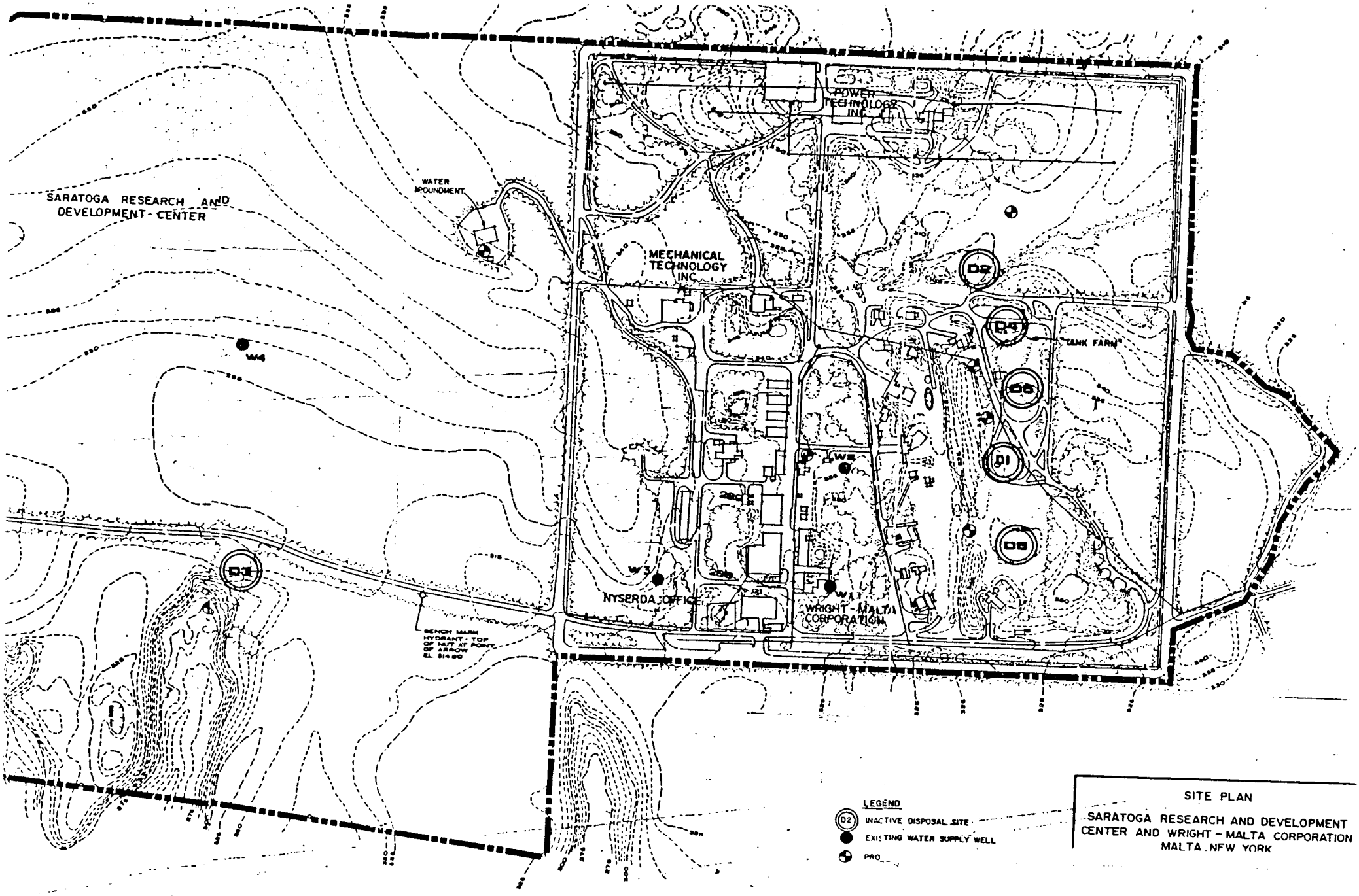
ND - not detected

Note 1: values from the NYSDOH were received by telephone from Gary Litwin (NYSDOH) and should not be considered official until release by the department.

Note 2: Boron also was detected in samples collected by C. T. Male from Well No. 3 (0.048 mg/l) and Well No. 4 (0.140 mg/l). There is a possibility that boron could be present due to past disposal of boron-containing compounds on-site.

Figures


SARATOGA RESEARCH AND DEVELOPMENT CENTER
GENERAL ELECTRIC
MECHANICAL TECHNOLOGY INC.
NYSERDA OFFICE
WRIGHT MALTA CORPORATION
LEGEND
SITE PLAN
SARATOGA RESEARCH AND DEVELOPM
CENTER AND WRIGHT - MALTA CORPOR
MALTA NEW YORK


SARATOGA RESEARCH AND DEVELOPMENT CENTER
WATER IMPOUNDMENT
POWER TECHNOLOGY INC.
MECHANICAL TECHNOLOGY INC.
TANK FARM
NYSERDA OFFICE
WRIGHT - MALTA CORPORATION
BENCH MARK HYDRANT - TOP OF NUT AT POINT OF ARROW EL. 314.80
W1
W2
W3
W4
W5
D1
D2
D3
D4
D5
D6
LEGEND
INACTIVE DISPOSAL SITE
EXISTING WATER SUPPLY WELL
PRO
SITE PLAN
SARATOGA RESEARCH AND DEVELOPMENT CENTER AND WRIGHT - MALTA CORPORATION
MALTA, NEW YORK

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J. 08086/609/848-3939

ANALYSIS REPORT
NO. 02079, 02080, 02081

CERTIFICATE OF ANALYSIS

CLIENT

Coastal Services Inc.
P.O. Box 140
Rensselaer, N.J. 12144
Attn: Tom Rogers

LOG NUMBER	SAMPLE IDENTIFICATION
02079	NYS Energy Sample #1
02080	NYS Energy Sample #2
02081	NYS Energy Sample #3

SAMPLE RECEIVED 3/30/79 ANALYSIS COMPLETED 4/16/79

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER		02079	02080	02081
BOD_5*				Chlorine Demand				
COD				Chlorine Residual				
TOC				Chloride (CL)				
Dissolved Oxygen				Silica				
Suspended Solids				Petroleum HYC.				
Total Solids				Hardness (as $CaCO_3$)				
Dissolved Solids				Flash Point (°C)		38.	30.	32.
Sett. Solids (ml/L)				Hydrazine		90.	105	115
pH				Beryllium	**	<0.2	<0.2	<0.2
Phenols				Aluminum				
Cyanide (Total)				Antimony				
Fluoride				Arsenic		0.030	0.040	0.034
Cyanide (Free)				Barium	**	<0.5	<0.5	<0.5
Surfactants (mg/L LAS)				Boron				
Oil & Grease (Freon)				Cadmium	**	<0.02	<0.02	<0.02
				Calcium (Ca)				
Nitrogen (KJD as N)				Chromium (Total)		**<0.2	0.2	**<0.2
Nitrogen (Ammonia as N)				Chromium (Hexa)				
Nitrogen (Organic as N)				Copper				
Nitrite (N)				Iron				
Nitrate (N)				Lead		**<0.2	0.2	0.2
Phosphate (P) Total				Magnesium (Mg)				
Phosphate (P) - Ortho				Manganese				
Sulfate (SO_4)				Mercury		0.036	0.038	0.0012
Sulfite (SO_3)				Nickel	**	<0.2	<0.2	<0.2
Sulfide				Potassium				
Color				Selenium				
Turbidity (NTU)				Silver	**	<0.02	<0.02	<0.02
Conductivity (Micromohs)				Sodium				
Alk (Total) as $CaCO_3$				Tin				
				Titanium				
Fecal Coliform				Zinc		1.9	4.0	4.0
Total Coliform								

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

LAB CERTIFICATION NO. 08153
N.J. DEPARTMENT OF HEALTH

Richard V. Tyrrel
LAB DIRECTOR

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J 08086/609/848-3939

ANALYSIS REPORT

NO. 02082, 08083, 08084

CERTIFICATE OF ANALYSIS

NEW YORK STATE ENERGY RESEARCH & DEVELOPMENT AUTHORITY

JUN 2 8 1979

TREASURER'S OFFICE

CLIENT

COASTAL SERVICES INC.
P.O. Box 140
Rennsalear, N.Y. 12144

Attn: Mr. Tom Rogers

LOG NUMBER	SAMPLE IDENTIFICATION
02082	NYS Energy #4
02083	NYS Energy #5
02084	NYS Energy #6

SAMPLE RECEIVED 3/30/79 ANALYSIS COMPLETED 4/16/79

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER		02082	02083	02084
BOD_5*				Chlorine Demand				
COD				Chlorine Residual				
TOC				Chloride (CL)				
Dissolved Oxygen				Silica				
Suspended Solids				Petroleum HYC.				
Total Solids				Hardness (as $CaCO_3$)				
Dissolved Solids				Flash Point(°C)		25.	23.	23.
Sett, Solids (ml/L)				Hydrazine		90.	90.	90.
pH				Beryllium	**	<0.2	<0.2	<0.2
Phenols				Aluminum				
Cyanide (Total)				Antimony				
Fluoride				Arsenic		0.041	0.034	0.03
Cyanide (Free)				Barium	**	<0.5	<0.5	<0.5
Surfactants (mg/L LAS)				Boron				
Oil & Grease (Freon)				Cadmium	**	<0.02	<0.02	<0.02
				Calcium (Ca)				
Nitrogen (KJD as N)				Chromium (Total)	**	<0.2	<0.2	<0.2
Nitrogen (Ammonia as N)				Chromium (Hexa)				
Nitrogen (Organic as N)				Copper				
Nitrite (N)				Iron				
Nitrate (N)				Lead		0.2	0.2	0.2
Phosphate (P) Total				Magnesium (Mg)				
Phosphate (P) - Ortho				Manganese				
Sulfate (SO_4)				Mercury		0.002	0.0010	0.0004
Sulfite (SO_3)				Nickel	**	<0.2	<0.2	<0.2
Sulfide				Potassium				
Color				Selenium				
Turbidity (NTU)				Silver	**	<0.02	<0.02	<0.02
Conductivity (Micromohs)				Sodium				
Alk (Total) as $CaCO_3$				Tin				
				Titanium				
Fecal Coliform				Zinc		3.8	4.2	4.0
Total Coliform								

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

LAB CERTIFICATION NO: 08153
N.J. DEPARTMENT OF HEALTH

Richard W. Lynch
LAB DIRECTOR

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J 08086/609/848-3939

ANALYSIS REPORT
NO. 02085, 02086, 02087

CERTIFICATE OF ANALYSIS

CLIENT

COASTAL SERVICES INC.
P.O. Box 140
Renssalear, N.Y. 12144

Attn: Mr. Tom Rogers

LOG NUMBER	SAMPLE IDENTIFICATION
02085	NYS Energy , Sx. #7
02086	NYS Energy , Sx. #8
02087	NYS Energy , Sx. #9

SAMPLE RECEIVED 3/30/79 ANALYSIS COMPLETED 4/16/79

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	02085	02086	02087
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.			
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids				Flash Point (°C)	28.	23.	28.
Sett. Solids (ml/L)				Hydrazine	120	100	95.
pH				Beryllium **	<0.2	<0.2	<0.2
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic	0.043	0.031	0.031
Cyanide (Free)				Barium **	< 0.5	<0.5	< 0.5
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium **	< 0.02	<0.02	<0.02
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	**<0.2	0.2	0.2
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead	0.2	**<0.2	0.2
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	0.002	0.0017	0.0012
Sulfite (SO_3)				Nickel	0.1	**<0.2	0.2
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver **	<0.02	<0.02	<0.02
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	0.0	0.0	0.0
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

LAB CERTIFICATION NO: 08153
N.J. DEPARTMENT OF HEALTH

Richard W. Lynch
LAB DIRECTOR

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J 08086/609/848-3939

ANALYSIS REPORT
NO. 02088

CERTIFICATE OF ANALYSIS

CLIENT

COASTAL SERVICES INC.
P.O.Box 140
Renssalear, N.Y. 12144

Attn: Mr. Tom Rogers

LOG NUMBER	SAMPLE IDENTIFICATION
02088	NYS energy, Sx. # 10

SAMPLE RECEIVED 3/30/79 ANALYSIS COMPLETED 4/16/79

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	02088
BOD_5*				Chlorine Demand	
COD				Chlorine Residual	
TOC				Chloride (CL)	
Dissolved Oxygen				Silica	
Suspended Solids				Petroleum HYC	
Total Solids				Hardness (as $CaCO_3$)	
Dissolved Solids				Flash Point (°C)	> 95
Sett. Solids (ml/L)				Hydrazine	1.3
pH				Beryllium **	< 0.2
Phenols				Aluminum	
Cyanide (Total)				Antimony	
Fluoride				Arsenic	0.056
Cyanide (Free)				Barium **	< 0.5
Surfactants (mg/L LAS)				Boron	
Oil & Grease (Freon)				Cadmium	**<0.02
				Calcium (Ca)	
Nitrogen (KJD as N)				Chromium (Total)	0.2
Nitrogen (Ammonia as N)				Chromium (Hexa)	
Nitrogen (Organic as N)				Copper	
Nitrite (N)				Iron	
Nitrate (N)				Lead	**<0.2
Phosphate (P) Total				Magnesium (Mg)	
Phosphate (P) - Ortho				Manganese	
Sulfate (SO_4)				Mercury	0.004
Sulfite (SO_3)				Nickel	1.0
Sulfide				Potassium	
Color				Selenium	
Turbidity (NTU)				Silver **	< 0.02
Conductivity (Micromohs)				Sodium	
Alk (Total) as $CaCO_3$				Tin	
				Titanium	
Fecal Coliform				Zinc	0.8
Total Coliform					

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

LAB CERTIFICATION NO: 09163
N.J. DEPARTMENT OF HEALTH

Richard W. Lyall

PAGE

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J. 08086/609-848-3939

March 28, 1978

From: COASTAL SERVICES INC.
P.O. Box 140
Renssalear, N.Y. 12144

LABORATORY REPORT OF ANALYSIS

Sample Received: 3/30/79

Analysis Completed: 4/26/79

Sample Identification: Composite of N.Y.S. Energy Fuels(#1-10); and 4 Ashland Chemical Fuels

Log # : 02093

Lab Results:

Specific Gravity: 0.93

pH : 12.7

Suspended Solids: 16.ppm

Total Solids(% wt.) : 12,000 ppm

Total Solids(% vol.): 11,200 ppm

Vol. Total Solids(% wt.) : 92%

Boiling Point(sxs.1-10) : 93° C

Acidity: none

Iodine: <1 ppm

Chloride: 330ppm

Organic Chloride: 210ppm

Flouride: 1.4ppm

Cyanide: 1.2ppm

Phenol: 0.013 ppm

PCB : <0.001ppm

PBB : <0.001 ppm

% Moisture : sxs.1-10 only (31%) ; total comp. (22%)

% Solvent : sxs.1-10 only (69%) ; total comp. (78%)

CENTURY
Environmental Testing Labs, Inc.
P.O. Box 248/Jessup Road & Route I-295/Thorofare, N.J. 08086/609-848-3939

Coastal Services Inc.

Lab Results: (cont)

Asbestos : <1. ppm

Silica : <1. ppm

BTU/ Lb. : 5940

Boron : 0.08 ppm

Sulfur : 1590 ppm

Total Phosphorus: 1.6 ppm

Bromide : < 1. ppm

Richard W. Lynch

Richard W. Lynch (Lab Director)

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

E 1 RESULTS OF EXAMINATION INTERIM REPORT

PLE ID: 51105 SAMPLE RECEIVED:85/04/22/ CHARGE: 7.00
GRAM: 108:HAZARDOUS WASTE SITE-PRELIMINARY INVESTIGATION
RCE ID: DRAINAGE BASIN: GAZETTEER CODE:4560
ITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
ITUDE: . LONGITUDE: . Z DIRECTION:
ATION: FIELD BLANK
CRIPTION:WITH SAMPLE #51102-51104
ORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
T PATTERN: VOL2:EPA METHOD 503.1 & F.R.METHOD 601
PLE TYPE: 297:FIELD BLANK
E OF SAMPLING: / / : LAST ACTION DATE:85/04/25

	PARAMETER	RESULT	
T62009	CHLOROMETHANE	< 1. MCG/L	
T61809	BROMOMETHANE	< 1. MCG/L	
T41009	VINYL CHLORIDE	< 1. MCG/L	
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L	
T61909	CHLOROETHANE	< 1. MCG/L	
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L	
T23809	DICHLOROMETHANE	< 1. MCG/L	
T50909	1,1-DICHLOROETHENE	< 1. MCG/L	
T51909	1,1-DICHLOROETHANE	< 1. MCG/L	
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L	
T39009	CHLOROFORM	< 1. MCG/L	
T50809	1,2-DICHLOROETHANE	< 1. MCG/L	
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L	
T36609	CARBON TETRACHLORIDE	< 1. MCG/L	
T38909	BROMODICHLOROMETHANE	< 1. MCG/L	
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L	
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L	
T41109	TRICHLOROETHYLENE	< 1. MCG/L	
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L	
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L	
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L	
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L	
T42109	BROMOFORM	< 1. MCG/L	
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L	
T41209	TETRACHLOROETHENE	< 1. MCG/L	
T40909	CHLOROBENZENE	< 1. MCG/L	
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L	
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L	
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L	
T34409	BENZENE		NE
T39209	TOLUENE		NE
T51009	ETHYLBENZENE		NE
T85209	1-CHLOROCYCLOHEXENE-1		NE

**** CONTINUED ON NEXT PAGE ****

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SUBMITTED BY:LITWIN

5 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

E 2 RESULTS OF EXAMINATION INTERIM REPORT

PLE ID: 51105 SAMPLE RECEIVED:85/04/22/ CHARGE: 7.00
ITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
ATION: FIELD BLANK
E OF SAMPLING: / / : LAST ACTION DATE:85/04/25

	PARAMETER	RESULT	
T70409	PARA-XYLENE		NE
T70309	META-XYLENE		NE
T51409	ORTHO-XYLENE		NE
T85309	CUMENE		NE
T85409	STYRENE		NE
T85509	P-BROMOFLUOROBENZENE		NE
T51109	N-PROPYLBENZENE		NE
T85609	TERT-BUTYLBENZENE		NE
T85709	O/P-CHLOROTOLUENE		NE
T51209	BROMOBENZENE		NE
T50509	META-CHLOROTOLUENE		NE
T85809	1,3,5-TRIMETHYLBENZENE		NE
T85909	1,2,4-TRIMETHYLBENZENE		NE
T86009	P-CYMENE		NE
T86109	CYCLOPROPYLBENZENE		NE
T86209	SEC-BUTYLBENZENE		NE
T86309	N-BUTYLBENZENE		NE
T86409	2,3-BENZOFURAN		NE
T52509	HEXACHLOROBUTADIENE (C-46)		NE
T44009	1,2,4-TRICHLOROBENZENE		NE
T65609	NAPHTHALENE		NE
T43909	1,2,3-TRICHLOROBENZENE		NE

**** END OF REPORT ****

ER KEY TYPE AND VALUE:

0010 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION INTERIM REPORT

SAMPLE ID: 51104 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
PROGRAM: 108:HAZARDOUS WASTE SITE-PRELIMINARY INVESTIGATION
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:4560
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: MALTA ROCKET FUEL SITE
DESCRIPTION:WELL #1
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 85/04/22 09:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	4. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	25. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	13. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	NE
T39209	TOLUENE	NE
T51009	ETHYLBENZENE	NE
T85209	1-CHLOROCYCLOHEXENE-1	NE

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SUBMITTED BY:LITWIN

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

: 2 RESULTS OF EXAMINATION INTERIM REPORT

'LE ID: 51104 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
TICAL SUBDIVISION:MALTA COUNTY:SARATOGA
ATION: MALTA ROCKET FUEL SITE
E OF SAMPLING: 85/04/22 09:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	NE
T70309	META-XYLENE	NE
T51409	ORTHO-XYLENE	NE
T85309	CUMENE	NE
T85409	STYRENE	NE
T85509	P-BROMOFLUOROBENZENE	NE
T51109	N-PROPYLBENZENE	NE
T85609	TERT-BUTYLBENZENE	NE
T85709	O/P-CHLOROTOLUENE	NE
T51209	BROMOBENZENE	NE
T50509	META-CHLOROTOLUENE	NE
T85809	1,3,5-TRIMETHYLBENZENE	NE
T85909	1,2,4-TRIMETHYLBENZENE	NE
T86009	P-CYMENE	NE
T86109	CYCLOPROPYLBENZENE	NE
T86209	SEC-BUTYLBENZENE	NE
T86309	N-BUTYLBENZENE	NE
T86409	2,3-BENZOFURAN	NE
T52509	HEXACHLOROBUTADIENE (C-46)	NE
T44009	1,2,4-TRICHLOROBENZENE	NE
T65609	NAPHTHALENE	NE
T43909	1,2,3-TRICHLOROBENZENE	NE
T67109	PHENOL	NE
T66409	2-CHLOROPHENOL	NE
T66809	2-NITROPHENOL	NE
T66609	2,4-DIMETHYLPHENOL	NE
T66509	2,4-DICHLOROPHENOL	NE
T66309	4-CHLORO-3-METHYLPHENOL	NE
T67209	2,4,6-TRICHLOROPHENOL	NE
T49609	2,4,5-TRICHLOROPHENOL	NE
T66709	2,4-DINITROPHENOL	NE
T66909	4-NITROPHENOL	NE
T68509	2-METHYL-4,6-DINITROPHENOL	NE
T67009	PENTACHLOROPHENOL	NE
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NE
T63909	BIS(2-CHLOROETHYL)ETHER	NE
T65909	N-NITROSODI-N-PROPYLAMINE	NE
T65309	HEXACHLOROETHANE	NE
T65709	NITROBENZENE	NE
T65509	ISOPHORONE	NE
T68609	BIS(2-CHLOROETHOXY)METHANE	NE
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	NE
T64109	2-CHLORONAPHTHALENE	NE
T64909	2,6-DINITROTOLUENE	NE
T63109	ACENAPHTHYLENE	NE
T64709	DIMETHYLPHTHALATE	NE
T63009	ACENAPHTHENE	NE
T64809	2,4-DINITROTOLUENE	NE

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION — INTERIM REPORT

PLE ID: 51104 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
TICAL SUBDIVISION:MALTA COUNTY:SARATOGA
ATION: MALTA ROCKET FUEL SITE
E OF SAMPLING: 85/04/22 09:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T64609	DIETHYLPHTHALATE	NE
T65209	FLUORENE	NE
T68409	4-CHLOROPHENYL PHENYL ETHER	NE
T66009	N-NITROSODIPHENYLAMINE	NE
T65109	1,2-DIPHENYLHYDRAZINE	NE
T68309	4-BROMOPHENYL PHENYL ETHER	NE
T48809	HEXACHLOROBENZENE	NE
T66109	PHENANTHRENE	NE
T63209	ANTHRACENE	NE
T64409	DI-N-BUTYLPHTHALATE	NE
T68009	FLUORANTHENE	NE
T66209	PYRENE	NE
T63809	BENZIDINE	NE
T64009	BUTYL BENZYL PHTHALATE	NE
T63309	BENZO(A)ANTHRACENE	NE
T64509	3,3'-DICHLOROBENZIDINE	NE
T64209	CHRYSENE	NE
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	NE
T65009	DIOCTYLPHTHALATE	NE
T63409	BENZO(B)FLUORANTHENE	NE
T63509	BENZO(K)FLUORANTHENE	NE
T63609	BENZO(A)PYRENE	NE
T65409	INDENO(1,2,3-CD)PYRENE	NE
T64309	DIBENZO(A,H)ANTHRACENE	NE
T63709	BENZO(GHI)PERYLENE	NE
T15709	HCH,ALPHA	NE
T15809	HCH,BETA	NE
T35609	HCH,GAMMA (LINDANE)	NE
T16009	HCH,DELTA	NE
T08009	HEPTACHLOR	NE
T07709	ALDRIN	NE
T08309	HEPTACHLOR EPOXIDE	NE
T43309	ENDOSULFAN I	NE
T14809	DDE -PARA, PARA	NE
T08509	DIELDRIN	NE
T08409	ENDRIN	NE
T14909	DDD -PARA, PARA	NE
T43409	ENDOSULFAN II	NE
T67409	ENDRIN ALDEHYDE	NE
T67309	ENDOSULFAN SULFATE	NE
T14709	DDT -PARA, PARA	NE
	FOLLOWING PARAMETERS NOT PART OF TEST PATTERN	
T08209	METHOXYCHLOR	NE
T35509	TOXAPHENE	NE
T08609	CHLORDANE	NE
T39809	PCB,AROCLOR 1221	NE
T38009	PCB,AROCLOR 1016/1242	NE
T38109	PCB,AROCLOR 1254	NE

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

: 4 RESULTS OF EXAMINATION INTERIM REPORT

'LE ID: 51104 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
TICAL SUBDIVISION:MALTA COUNTY:SARATOGA
ATION: MALTA ROCKET FUEL SITE
: OF SAMPLING: 85/04/22 09:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T41609	PCB,AROCLOR 1260	NE
T52209	PCB,AROCLOR 1248	NE

**** END OF REPORT ****

:R KEY TYPE AND VALUE:ACCN 51105

0006

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

FAGE 1 RESULTS OF EXAMINATION INTERIM REPORT

SAMPLE ID: 51103 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
PROGRAM: 108:HAZARDOUS WASTE SITE-PRELIMINARY INVESTIGATION
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:4560
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: MALTA ROCKET FUEL SITE
DESCRIPTION:WELL #2
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 85/04/22 09:30 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT	
T62009	CHLOROMETHANE	< 1. MCG/L	
T61809	BROMOMETHANE	< 1. MCG/L	
T41009	VINYL CHLORIDE	< 1. MCG/L	
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L	
T61909	CHLOROETHANE	< 1. MCG/L	
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L	
T23809	DICHLOROMETHANE	< 1. MCG/L	
T50909	1,1-DICHLOROETHENE	< 1. MCG/L	
T51909	1,1-DICHLOROETHANE	< 1. MCG/L	
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L	
T39009	CHLOROFORM	25. MCG/L	
T50809	1,2-DICHLOROETHANE	< 1. MCG/L	
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L	
T36609	CARBON TETRACHLORIDE	220. MCG/L	
T38909	BROMODICHLOROMETHANE	< 1. MCG/L	
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L	
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L	
T41109	TRICHLOROETHYLENE	120. MCG/L	
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L	
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L	
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L	
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L	
T42109	BROMOFORM	< 1. MCG/L	
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L	
T41209	TETRACHLOROETHENE	< 1. MCG/L	
T40909	CHLOROBENZENE	< 1. MCG/L	
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L	
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L	
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L	
T34409	BENZENE		NE
T39209	TOLUENE		NE
T51009	ETHYLBENZENE		NE
T85209	1-CHLOROCYCLOHEXENE-1		NE

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SUBMITTED BY:LITWIN

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

INTERIM REPORT

SAMPLE ID: 51103 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 09:30 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	NE
T70309	META-XYLENE	NE
T51409	ORTHO-XYLENE	NE
T85309	CUMENE	NE
T85409	STYRENE	NE
T85509	P-BROMOFLUOROBENZENE	NE
T51109	N-PROPYLBENZENE	NE
T85609	TERT-BUTYLBENZENE	NE
T85709	O/P-CHLOROTOLUENE	NE
T51209	BROMOBENZENE	NE
T50509	META-CHLOROTOLUENE	NE
T85809	1,3,5-TRIMETHYLBENZENE	NE
T85909	1,2,4-TRIMETHYLBENZENE	NE
T86009	P-CYMENE	NE
T86109	CYCLOPROPYLBENZENE	NE
T86209	SEC-BUTYLBENZENE	NE
T86309	N-BUTYLBENZENE	NE
T86409	2,3-BENZOFURAN	NE
T52509	HEXACHLOROBUTADIENE (C-46)	NE
T44009	1,2,4-TRICHLOROBENZENE	NE
T65609	NAPHTHALENE	NE
T43909	1,2,3-TRICHLOROBENZENE	NE
T67109	PHENOL	NE
T66409	2-CHLOROPHENOL	NE
T66809	2-NITROPHENOL	NE
T66609	2,4-DIMETHYLPHENOL	NE
T66509	2,4-DICHLOROPHENOL	NE
T66309	4-CHLORO-3-METHYLPHENOL	NE
T67209	2,4,6-TRICHLOROPHENOL	NE
T49609	2,4,5-TRICHLOROPHENOL	NE
T66709	2,4-DINITROPHENOL	NE
T66909	4-NITROPHENOL	NE
T68509	2-METHYL-4,6-DINITROPHENOL	NE
T67009	PENTACHLOROPHENOL	NE
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NE
T63909	BIS(2-CHLOROETHYL)ETHER	NE
T65909	N-NITROSODI-N-PROPYLAMINE	NE
T65309	HEXACHLOROETHANE	NE
T65709	NITROBENZENE	NE
T65509	ISOPHORONE	NE
T68609	BIS(2-CHLOROETHOXY)METHANE	NE
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	NE
T64109	2-CHLORONAPHTHALENE	NE
T64909	2,6-DINITROTOLUENE	NE
T63109	ACENAPHTHYLENE	NE
T64709	DIMETHYLPHTHALATE	NE
T63009	ACENAPHTHENE	NE
T64809	2,4-DINITROTOLUENE	NE

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

INTERIM REPORT

SAMPLE ID: 51103 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 09:30 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T64609	DIETHYLPHTHALATE	NE
T65209	FLUORENE	NE
T68409	4-CHLOROPHENYL PHENYL ETHER	NE
T66009	N-NITROSODIPHENYLAMINE	NE
T65109	1,2-DIPHENYLHYDRAZINE	NE
T68309	4-BROMOPHENYL PHENYL ETHER	NE
T48809	HEXACHLOROBENZENE	NE
T66109	PHENANTHRENE	NE
T63209	ANTHRACENE	NE
T64409	DI-N-BUTYLPHTHALATE	NE
T68009	FLUORANTHENE	NE
T66209	PYRENE	NE
T63809	BENZIDINE	NE
T64009	BUTYL BENZYL PHTHALATE	NE
T63309	BENZO(A)ANTHRACENE	NE
T64509	3,3'-DICHLOROBENZIDINE	NE
T64209	CHRYSENE	NE
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	NE
T65009	DIOCTYLPHTHALATE	NE
T63409	BENZO(B)FLUORANTHENE	NE
T63509	BENZO(K)FLUORANTHENE	NE
T63609	BENZO(A)PYRENE	NE
T65409	INDENO(1,2,3-CD)PYRENE	NE
T64309	DIBENZO(A,H)ANTHRACENE	NE
T63709	BENZO(GHI)PERYLENE	NE
T15709	HCH,ALPHA	NE
T15809	HCH,BETA	NE
T35609	HCH,GAMMA (LINDANE)	NE
T16009	HCH,DELTA	NE
T08009	HEPTACHLOR	NE
T07709	ALDRIN	NE
T08309	HEPTACHLOR EPOXIDE	NE
T43309	ENDOSULFAN I	NE
T14809	DDE -PARA, PARA	NE
T08509	DIELDRIN	NE
T08409	ENDRIN	NE
T14909	DDD -PARA, PARA	NE
T43409	ENDOSULFAN II	NE
T67409	ENDRIN ALDEHYDE	NE
T67309	ENDOSULFAN SULFATE	NE
T14709	DDT -PARA, PARA	NE
	FOLLOWING PARAMETERS NOT PART OF TEST PATTERN	
T08209	METHOXYCHLOR	NE
T35509	TOXAPHENE	NE
T08609	CHLORDANE	NE
T39809	PCB,AROCLOR 1221	NE
T38009	PCB,AROCLOR 1016/1242	NE
T38109	PCB,AROCLOR 1254	NE

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

INTERIM REPORT

SAMPLE ID: 51103 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 09:30 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T41609	PCB,AROCLOR 1260	NE
T52209	PCB,AROCLOR 1248	NE

**** END OF REPORT ****

ENTER KEY TYPE AND VALUE:ACCN 51104

0002

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION INTERIM REPORT

SAMPLE ID: 51102 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
PROGRAM: 108:HAZARDOUS WASTE SITE-PRELIMINARY INVESTIGATION
SOURCE ID: DRAINAGE BASIN: GAZETTEER CODE:4560
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: MALTA ROCKET FUEL SITE
DESCRIPTION:FINISHED WATER
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 85/04/22 10:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	14. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	220. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	59. MCG/L
T44909	DIBROMOCHLOROMETHANE	3. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	NE
T39209	TOLUENE	NE
T51009	ETHYLBENZENE	NE
T85209	1-CHLOROCYCLOHEXENE-1	NE

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SUBMITTED BY:LITWIN

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION INTERIM REPORT

SAMPLE ID: 51102 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
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LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 10:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	NE
T70309	META-XYLENE	NE
T51409	ORTHO-XYLENE	NE
T85309	CUMENE	NE
T85409	STYRENE	NE
T85509	P-BROMOFLUOROBENZENE	NE
T51109	N-PROPYLBENZENE	NE
T85609	TERT-BUTYLBENZENE	NE
T85709	O/P-CHLOROTOLUENE	NE
T51209	BROMOBENZENE	NE
T50509	META-CHLOROTOLUENE	NE
T85809	1,3,5-TRIMETHYLBENZENE	NE
T85909	1,2,4-TRIMETHYLBENZENE	NE
T86009	P-CYMENE	NE
T86109	CYCLOPROPYLBENZENE	NE
T86209	SEC-BUTYLBENZENE	NE
T86309	N-BUTYLBENZENE	NE
T86409	2,3-BENZOFURAN	NE
T52509	HEXACHLOROBUTADIENE (C-46)	NE
T44009	1,2,4-TRICHLOROBENZENE	NE
T65609	NAPHTHALENE	NE
T43909	1,2,3-TRICHLOROBENZENE	NE
T67109	PHENOL	NE
T66409	2-CHLOROPHENOL	NE
T66809	2-NITROPHENOL	NE
T66609	2,4-DIMETHYLPHENOL	NE
T66509	2,4-DICHLOROPHENOL	NE
T66309	4-CHLORO-3-METHYLPHENOL	NE
T67209	2,4,6-TRICHLOROPHENOL	NE
T49609	2,4,5-TRICHLOROPHENOL	NE
T66709	2,4-DINITROPHENOL	NE
T66909	4-NITROPHENOL	NE
T68509	2-METHYL-4,6-DINITROPHENOL	NE
T67009	PENTACHLOROPHENOL	NE
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NE
T63909	BIS(2-CHLOROETHYL)ETHER	NE
T65909	N-NITROSODI-N-PROPYLAMINE	NE
T65309	HEXACHLOROETHANE	NE
T65709	NITROBENZENE	NE
T65509	ISOPHORONE	NE
T68609	BIS(2-CHLOROETHOXY)METHANE	NE
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	NE
T64109	2-CHLORONAPHTHALENE	NE
T64909	2,6-DINITROTOLUENE	NE
T63109	ACENAPHTHYLENE	NE
T64709	DIMETHYLPHTHALATE	NE
T63009	ACENAPHTHENE	NE
T64809	2,4-DINITROTOLUENE	NE

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0004,

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

INTERIM REPORT

SAMPLE ID: 51102 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 10:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T64609	DIETHYLPHTHALATE	NE
T65209	FLUORENE	NE
T68409	4-CHLOROPHENYL PHENYL ETHER	NE
T66009	N-NITROSODIPHENYLAMINE	NE
T65109	1,2-DIPHENYLHYDRAZINE	NE
T68309	4-BROMOPHENYL PHENYL ETHER	NE
T48809	HEXACHLOROBENZENE	NE
T66109	PHENANTHRENE	NE
T63209	ANTHRACENE	NE
T64409	DI-N-BUTYLPHTHALATE	NE
T68009	FLUORANTHENE	NE
T66209	PYRENE	NE
T63809	BENZIDINE	NE
T64009	BUTYL BENZYL PHTHALATE	NE
T63309	BENZO(A)ANTHRACENE	NE
T64509	3,3'-DICHLOROBENZIDINE	NE
T64209	CHRYSENE	NE
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	NE
T65009	DIOCTYLPHTHALATE	NE
T63409	BENZO(B)FLUORANTHENE	NE
T63509	BENZO(K)FLUORANTHENE	NE
T63609	BENZO(A)PYRENE	NE
T65409	INDENO(1,2,3-CD)PYRENE	NE
T64309	DIBENZO(A,H)ANTHRACENE	NE
T63709	BENZO(GHI)PERYLENE	NE
T15709	HCH,ALPHA	NE
T15809	HCH,BETA	NE
T35609	HCH,GAMMA (LINDANE)	NE
T16009	HCH,DELTA	NE
T08009	HEPTACHLOR	NE
T07709	ALDRIN	NE
T08309	HEPTACHLOR EPOXIDE	NE
T43309	ENDOSULFAN I	NE
T14809	DDE -PARA, PARA	NE
T08509	DIELDRIN	NE
T08409	ENDRIN	NE
T14909	DDD -PARA, PARA	NE
T43409	ENDOSULFAN II	NE
T67409	ENDRIN ALDEHYDE	NE
T67309	ENDOSULFAN SULFATE	NE
T14709	DDT -PARA, PARA	NE
	FOLLOWING PARAMETERS NOT PART OF TEST PATTERN	
T08209	METHOXYCHLOR	NE
T35509	TOXAPHENE	NE
T08609	CHLORDANE	NE
T39809	PCB,AROCLOR 1221	NE
T38009	PCB,AROCLOR 1016/1242	NE
T38109	PCB,AROCLOR 1254	NE

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0005

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 4 RESULTS OF EXAMINATION INTERIM REPORT

SAMPLE ID: 51102 SAMPLE RECEIVED:85/04/22/ CHARGE: 0.00
POLITICAL SUBDIVISION:MALTA COUNTY:SARATOGA
LOCATION: MALTA ROCKET FUEL SITE
TIME OF SAMPLING: 85/04/22 10:00 LAST ACTION DATE:85/04/25

	PARAMETER	RESULT
T41609	PCB,AROCLOR 1260	NE
T52209	PCB,AROCLOR 1248	NE

**** END OF REPORT ****

ENTER KEY TYPE AND VALUE:ACCN 51103

NEW YORK STATE DEPARTMENT OF HEALTH
OFFICE OF PUBLIC HEALTH
FIELD OPERATIONS MANAGEMENT GROUP

PROBLEM ALERT

TO: Michael E. Burke, P.E.
Dir., Bur. PWSP

FROM: Kenneth J. Markussen, P.E. KJMarkussen
Chief, Operations Section, BPWSP

Distribution: FILE / ROCKET FUEL SITE

Commissioner of Health
Dep. Commissioner for Operations ok2
Director Public Health/Executive Director
Director Field Operations Management Group
Director, Center for Labs & Research
Director, Center for Health Promotion
Director, Center for Environmental Health
cc: Division Environmental Protection
Bureau Public Water Supply Protection
(If Toxics) Mr. Tramontano
Dr. Eadon
Dr. N. Kim
Dr. Hetling
Mr. Simpson - SEMO
Dr. Loudon
Mr. Fear

Site Name and Owner: Saratoga Research & Development Center - State Energy Authority

Location: Malta (XX,T,XX); Saratoga (County)

Call From: Steve Lewis (Name) (Title)

State Energy Authority (Unit) ESP, Agency Bldg. #2 (Address)

Date: April 12, 1985 **Time:** 9:30 AM **Phone:** AC 518 **Tie Line** **No.** 465-6251

Problem (Describe circumstances, area affected, and possible duration):
The water system serving the Saratoga Research and Development Center was found to be contaminated (carbon tetrachloride 440 ug/l, trichloroethylene 120 ug/l, PCBs 1.3 ug/l and pentaboron 0.15 ug/l) after a sample was collected and analyzed by C.T. Male. The workers at the site have been advised to not drink the water. The site is a former rocket engine testing facility that is in the process of being sold by the State Energy Authority to the Saratoga County Economic Development Commission.

Action Undertaken: C.T. Male will conduct further sampling today at each of the four wells serving this facility. Mr. Litwin of the Albany Regional Office will sample the nearby Luther Woods Housing Development.

amples collected by the Health Department? YES X NO

ype of sample(s) 601, 503.1, Priority Pollutants (at Luther Woods)

ESPONSIBLE DIVISION FOR FOLLOW-UP Environmental Protection

ield Operations Management Group
OMG-1 (Rev. 10/82)

STATE OF NEW YORK
DEPARTMENT OF HEALTH — OFFICE OF PUBLIC HEALTH

ALBANY REGIONAL OFFICE • BUILDING 7A • STATE OFFICE BUILDING CAMPUS • ALBANY, N.Y. 12226

DAVID AXELROD, M.D.
Commissioner

LINDA A. RANDOLPH, M.D., M.P.H.
Director, OPH

IAN T. LOUDON, M.D., D.P.H.
Regional Health Director

May 2, 1985

Raymond J. Kazyaka
Wright-Malta Corporation
Plains Road
Ballston Spa, New York 12020

RE: Rocket Fuel Site
ID# 546022
Malta (T), Saratoga County

Dear Mr. Kazyaka,

Please find attached an interim report which includes the partial results of the analysis of your water supply by EPA method 601. Results of the analysis by EPA methods 503.1 and 625 are pending and denoted by NE under the heading result.

The results available so far, however, show that the water supply (both well #2 and the distribution system) has concentrations of contaminents above the Commissioner of Health's guideline of 50 mcg/l for a single compound or 100 mcg/l in combination. I recommend that the water not be used for drinking or cooking purposes and that all persons served by the water supply be advised.

Well #1, although not above guideline levels, also showed contamination by the same compounds. A final report of the results will be forwarded to you when available.

If you have any questions, please feel free to contact me at (518) 457-7150.

Sincerely,

Gary A. Litwin
Program Research Specialist III

GAL/jcg
Attachments
cc: Steve Lewis, NYS Energy Research & Development Authority
Ronald Tramontano, Bureau of Toxic Substances Assessment
Ken Markussen, Bureau of Public Water Supply Protection
Brian Fear, Glens Falls District Office
Ray Cowen, NYS Department of Environmental Conservation, Region V, Warrensburg