Initial Site Investigation
Irving Oil Corporation
Island Pond Bulk Plant
Brighton, VT
(Site #97-2169)

Prepared for:

Irving Oil Corporation
700 Maine Avenue
PO Box 401
Bangor, ME 04402-0401

Prepared by:

Acadia Environmental Technology
4 Milk St.
Portland, ME 04101

January 20, 1998

Alison H. Jones, CG
Hydrogeologist

Thomas E. Schwarm, CG
President-Hydrogeologist

ACADIA
ENVIRONMENTAL TECHNOLOGY

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January 20, 1998

Mr. Gerald R. Lemire
Irving Oil Corporation
700 Maine Avenue
PO Box 401
Bangor, ME 04402-0401

Re: Initial Site Investigation
Irving Oil Corp. Island Pond Bulk Plant
Rt. 114, Brighton, VT

Dear Mr. Lemire:

Acadia Environmental Technology (Acadia) conducted an "initial site investigation" at the Irving Island Pond Bulk Plant in Brighton, VT at the request of Irving Oil Corporation. We appreciate the opportunity to provide this service. Please feel free to call us at your convenience with your questions or comments.

Sincerely,

Alison H. Jones, CG
Hydrogeologist

Thomas E. Schwarm, CG
President-Hydrogeologist

encl.

Introduction

Acadia Environmental Technology (Acadia) conducted an investigation at the Irving Island Pond Bulk Plant (Figure 1) at the request of Irving Oil Corporation (Irving). This investigation was designed after consultation with the Vermont Department of Environmental Conservation (DEC) according to a work plan dated September 2, 1997. The purpose of the investigation is to evaluate sensitive receptors and impacts of petroleum storage and handling to these receptors.

Previous Work

Acadia conducted a Phase I investigation for Irving; the report was dated February 21, 1997. During the course of that investigation, we identified a history of petroleum storage and transfer at the site. R. A. Scribner Oil Co. operated at the site in the 1960's; we could not find when their operations began at the site Caledonia Oil Company operated this facility before it was purchased by Irving in 1997.

There are 3 active underground storage tanks (USTs) and one active above ground storage tank (AST) at the site (Figure 2). The ages of these tanks are unknown. No documentation of earlier tanks, if there were any, was found during the Phase I investigation.

Based on the results of the Phase I investigation, Acadia conducted a Phase II Environmental Site Assessment; the report was dated February 28, 1997. Four small-diameter soil borings were installed with a truck-mounted Geoprobe® rig to the bedrock surface at depths of approximately 10 to 20 feet below grade (Figure 2). No groundwater quality data were collected during the Phase II investigation because the soil was dry down to the bedrock surface. Groundwater appears to flow on the bedrock surface and in bedrock fractures in this area because of the coarse soil.

Soil samples were analyzed in the field with a photoionization detector (PID) for volatile organic compounds (VOCs). VOC concentrations in soil headspace were highest at B-2 in a surface sample from 0 to 4 feet (517 ppm) and decreased at a depth of 6 feet. This is indicative of surface spills, possibly from tank filling. VOC concentrations above background levels were also recorded in the shallower samples at B-1 and B-4, also indicating surface sources. VOC concentrations declined significantly with depth. VOC concentrations in all soil samples from B-3 were low and consistent with background levels.

According to the *Geology of Island Pond Area* by Bruce K. Goodwin, Vermont Geological Survey Bulletin No. 20, dated 1963, soil in the area consists primary of sand and gravel glacial outwash. Till, a dense mixture of clay, sand, gravel and boulders is also present. Soils encountered during the Phase II investigation consisted of fine to medium sand with some gravel consistent with a glacial outwash origin. A gravel pit located about 1,500 feet to the northwest (Figure 1) further supports a glacial outwash origin of soils in this area.

Bedrock is shallow at the site. It was encountered during drilling at depths of 9.5 to 20 feet. No rock samples were collected. According to Goodwin (1963) granitic rocks are the prevalent bedrock type in the area.

Scope of Work

- Receptor Survey

Acadia conducted a survey of potential sensitive receptors at and near the site, including residential water wells, surface waters, buildings with basements, wetlands, sensitive ecological areas, areas of direct soil contact threat, and utility corridors.

- Sampling

Private wells within 1,000 feet of the bulk plant were sampled if accessible.

- Laboratory Analysis of Groundwater Samples

Any water samples collected were submitted to Katahdin Analytical Services in Westbrook, Maine for analysis by modified EPA Method 8015 for gasoline range organics (GRO) and by EPA Method 8020 for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tertiary-butyl-ether (MTBE). Samples were preserved and transported according to the protocol of the laboratory. Chain-of-custody documentation was maintained.

- Report Preparation

Acadia prepared this report to document the scope of work, methodology, and the results.

Results

Receptors

Acadia spoke with a Brighton Water District representative on December 4, 1997. The Cargill house, located about 500 feet to the north and uphill of the bulk plant has a private

well. Other houses nearby, including the Devereaux residence, and the Gillis and Stafford residences across Route 114 are on public water.

The public water supply is surface water located greater than one mile from the subject property, according to the Water District representative.

Public water and sewer lines run along Route 114.

The nearest surface water is the Pherrins River. It is located approximately 1,000 feet to the southwest on the south side of Route 114.

Sampling

The Cargills agreed to allow Acadia to collect a water sample. This residence has the only water supply well within 1000 feet of the bulk plant. We arranged to meet them, but no one was home when we went to the site. We did not collect a sample.

Groundwater Quality

No groundwater samples have been collected at this site or in the immediate area.

Conclusions

- One private water supply well, at the Cargill residence, was identified during a receptor survey. It is about 500 feet to the north; it appears to be upgradient of the bulk plant. No samples were collected from the Cargill residence because they were not at home at the arranged meeting time.

- Public water is available and in use in the area. Houses downgradient of the bulk plant use public water.

- The nearest surface water is the Pherrins River, located about 1000 feet to the south.

- The site has a low sensitivity to petroleum compounds. The only private well appears to be upgradient. Previously collected soil quality data indicate that impacts to other receptors such as basements and surface water appears unlikely. We recommend that no further work be conducted at this site.

- Since only 4 borings were drilled at the site; areas of soil and groundwater with greater concentrations of petroleum compounds may be present but were not identified. The most likely areas to find petroleum would be in the soil and groundwater around and under petroleum storage tanks and piping. Borings were not drilled in these areas to avoid damaging this equipment.

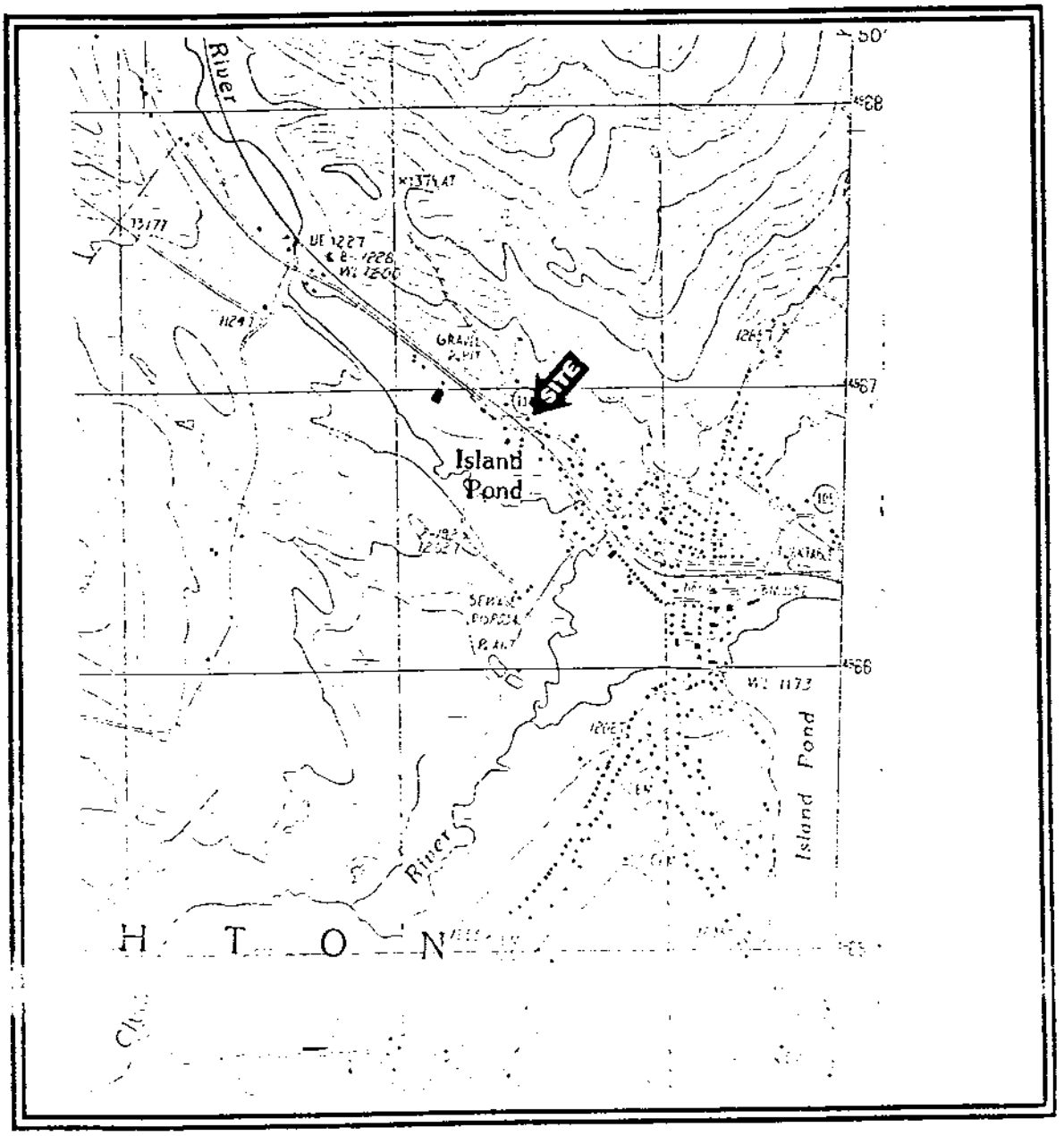
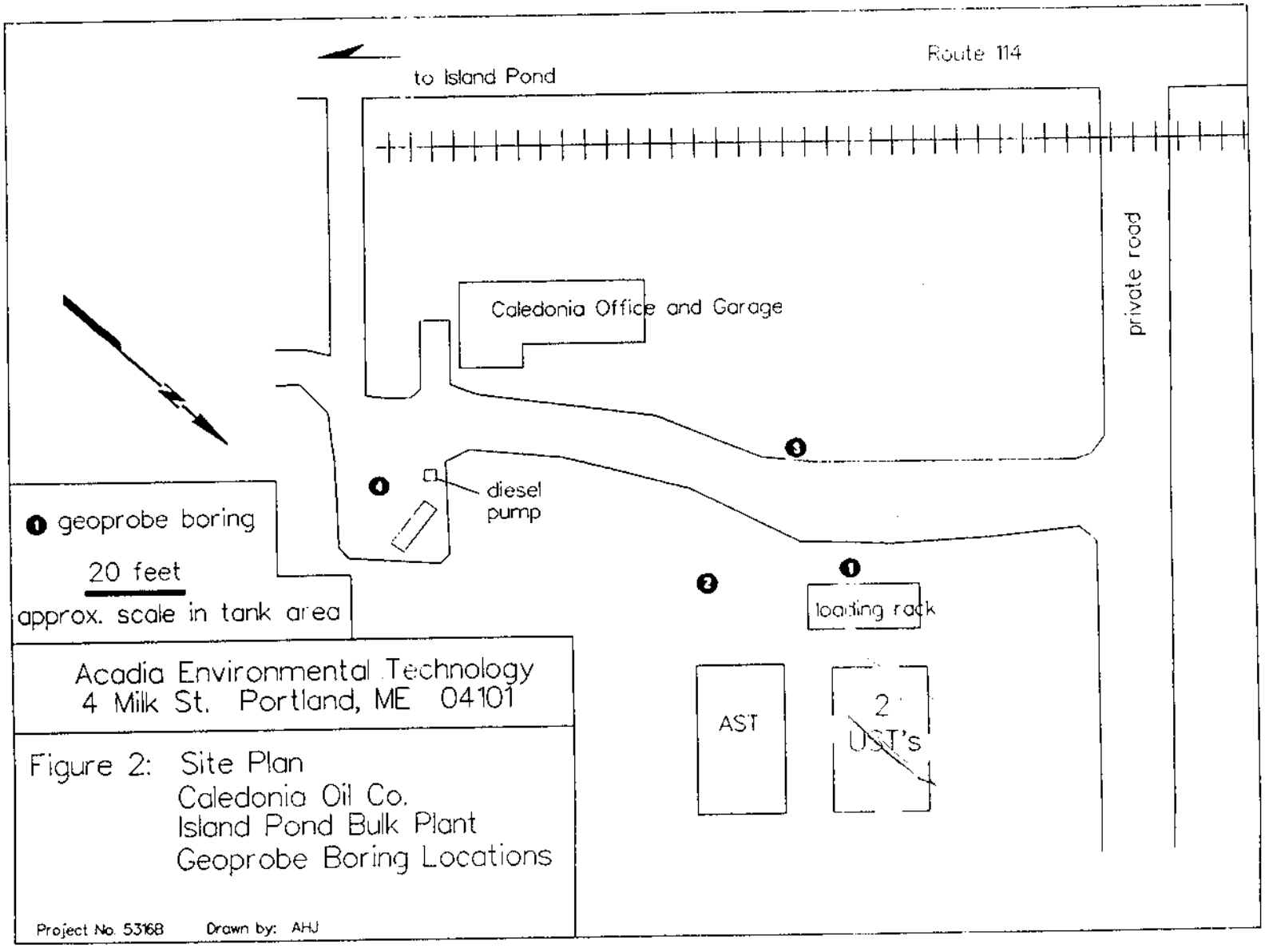


Figure 1:
Site Location Map
USGS Topographic Quadrangle
Island Pond, VT
1:24000


to Island Pond
Route 114
private road
Caledonia Office and Garage
diesel pump
loading rack
AST
2 UST's
1 geoprobe boring
20 feet
approx. scale in tank area
Acadia Environmental Technology
4 Milk St. Portland, ME 04101
Figure 2: Site Plan
Caledonia Oil Co.
Island Pond Bulk Plant
Geoprobe Boring Locations
Project No. 5316B
Drawn by: AHJ