ECM

environmental compliance monitoring, inc.

INTERIM PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

NORTH BRUNSWICK GULF PROPERTY
1696 GEORGES ROAD
NORTH BRUNSWICK, NEW JERSEY

PREPARED FOR:

MR. DARREN OROSS
236 ROUTE 1
EDISON, NEW JERSEY 08817

NOVEMBER 2001

349 Route 206
Hillsborough Professional Building
Hillsborough, NJ 08876

Telephone: 908-874-0990
Telefax: 908-874-0920

ECM

environmental compliance monitoring, inc.

November 1, 2001

Mr. Darren Oross
236 Route 1
Edison, New Jersey 08817

VIA FACSIMILE: (732) 572-3479

RE: Interim Phase II Environmental Site Assessment Report
North Brunswick Gulf Inc. Property
1696 Georges Road, North Brunswick, New Jersey
ECM Project # 1269

Dear Mr. Oross:

Environmental Compliance Monitoring, Inc. (ECM) is submitting this interim letter report to document the work and findings of the Phase II Environmental Site Assessment (ESA) partially completed at the above-referenced site. The work that was completed was conducted in accordance with the ECM proposal (# 7341, dated August 16, 2001) and our August 20, 2001, document request letter previously submitted to you. ECM is providing this interim letter report as continuation of the authorized work was suspended at the direction of Mr. Frederick A. Simon, attorney for the property owner, in his letter dated September 17, 2001.

PROJECT OBJECTIVE

A Phase II site assessment is generally conducted when existing information from a Phase I ESA or other source indicates that areas of environmental concern may exist at a property. In the case of the subject site, the proposed Phase II investigation entailed a limited soil and ground water sampling program in selected potential areas of environmental concern at the site, including the known underground storage tank locations, the in-ground hydraulic lifts, and suspected former septic disposal area. The purpose of the Phase II ESA was to evaluate the potential for recognized environmental conditions at the subject property. The scope of work, relative findings and conclusions from the work completed are outlined in the following sections.

349 Route 206, Hillsborough, New Jersey 08876
PHONE: 908-874-0990 FAX: 908-874-0920 *ecm-inc@att.net*
225 South Plank Road, Newburgh, New York 12550
PHONE: 914-566-0990 FAX: 914-566-0880

PRE-PHASE II DOCUMENT REVIEW

Based on project/client constraints, a Phase I ESA was not elected by the client. However, pursuant to the referenced proposal, ECM conducted several Phase I related tasks with which to further assess potential impacts from the historical use/operation of the site. These tasks are further outlined below.

FACILITY DOCUMENT REVIEW

ECM conducted a review of information provided by the property owner and/or client, which indicated the following:

- Four, 6,000-gallon gasoline underground storage tanks (USTs) were registered to Walter Lapp, Sr. (the current property owner), under the NJDEP UST Registration # 0101800.

- As reported by the property owner, the UST system was upgraded during 1998/1999 in the same location as the current system with the exception of the removal of a second pump island and associated piping, which was previously located closer to Route 130.

- One above ground storage tank (AST) was located on-site for waste oil; the property owner stated that the site never had a waste oil UST.

- The site building is heated by fuel oil, which is currently stored in an AST. A former heating oil UST was abandoned in place along the northern side of the building, reportedly during the late-1990's.

- Three former in-ground hydraulic lifts (two center-post and one dual-post) were previously located on-site; the dual-post lift was reportedly removed approximately during May 2001 with no apparent discharge reported. The property owner indicated that they may have soil sampling results from this work, which were not available at the time of the assessment.

- Two, four-inch diameter floor drains were noted, which reportedly tied into the municipal sanitary sewer. However, one drain from the original portion of building may have originally been connected to the site septic system. The drain connections were not confirmed at the time of the assessment.

- The facility was reportedly serviced by a septic system on the east side of the building prior to 1965; the property owner stated that the tank was reportedly removed when the site tied into the municipal sanitary sewer.

- Catch basins were noted in the rear of property, which reportedly drain to a surface swale.

- The facility has historically been serviced by the municipal water supply and did not have an on-site well.

HISTORICAL AERIAL PHOTOGRAPHIC REVIEW

ECM conducted a review of historical aerial photographs maintained at the Middlesex County Economic Development Office (New Brunswick, New Jersey) on August 21, 2001. The scale of each aerial was one-inch to 400-feet.

1962 – The original (northern) portion of the current site building and the two pump islands were apparent. Sparse development was apparent in the surrounding areas. The station to the south of the subject property (currently Getty) was noted at the time this photo was taken.

1967 – The site appeared similar to 1962 photo; the site to the north appeared undeveloped.

1974 – This photo was noted to be of poor quality. The site appeared similar as previous photo with increased residential development in surrounding areas than from 1967 photo.

1980 – General site features appeared relatively unchanged from the previous photo; except that the trees in rear of property appeared to have been cleared. The southern building addition had not been added at the time of photo.

1987 – The addition of southern portion of current site building and both pump islands were apparent in this photo.

1998 – The site building, UST pad and single pump island appeared in the same configuration as present day. Absence of second pump island and patched area noted near Route 130 was apparent. Surrounding areas similar to present with apparent mix of residential and commercial properties.

The Phase II sampling proposal entailed a soil boring and sampling program targeting selected potential areas of environmental concern at the site. Each boring would be advanced to a pre-selected total depth based on the area of concern. Soil samples were proposed for each boring for laboratory analyses from a depth based on field screening for evidence of impacts (i.e., odor, staining, or monitoring instrument response); ground water samples were also collected from selected borings based on the results of the field screening. As this assessment was not intended to satisfy regulatory requirements for site/remedial investigations, quality assurance samples (field blanks and duplicates) were not included in the scope of work. The proposed soil boring and sampling program included the following sampling locations:

Area of Concern	Approx. Depth Below Grade	Samples and Parameters	Supplementary Soil Parameters
Four Gasoline USTs	Twelve feet	Soil: Ten VO+10 & Lead GW: One VO+10 & Lead	N/A
Gas Pumps and Piping	Three feet	Soil: Six VO+10 & Lead GW: One VO+10 & Lead	N/A
Abandoned Fuel Oil UST	Eight feet	Soil: Two TPH	One VO+10 if TPH>1000ppm
In-ground Lifts	Eight feet	Soil: Three TPH	One PAH if TPH > 100 ppm
Potential Septic Area	Four feet	Soil: Four TPH GW: One VO+10, BN+15	One VO+10 if TPH detected

Notes: GW = Ground Water; VO+10 = Volatile Organics; TPH = Petroleum Hydrocarbons; BN+15 = Base Neutrals; PAH = Polyaromatic Hydrocarbons; N/A = Not Applicable; ppm = parts per million

The Phase II work was initiated on August 30, 2001. ECM coordinated the Phase II activities; Terra Probe Inc. provided drilling services; and the site owners (Walter Lapp Junior and Senior) provided facility information relative to facility operations, utilities, and information relative to the hydraulic lifts and ASTs/USTs. Laboratory services were provided by STL-Edison.

The soil boring program was initiated around the gasoline UST farm. The tank farm consisted of four, 6,000-gallon fiberglass USTs, positioned in a two-by-two configuration, located below a rectangular concrete pad, which measured 19.5 feet wide by 34 feet long. Based the reported 6,000-gallon capacity and measured 8-foot diameter of the USTs, the tanks were ascertained to be 16-feet in length based on standard tank dimensions. Based on these dimensions and as affirmed by the owner, the ends/edges of the USTs were understood to be located within the dimensions of the concrete pad.

NJDEP site investigation requirements (N.J.A.C. 7:26E-3.9(a)3i(1)) require soil samples within two-feet of the tank (or five feet in cases with additional field or safety considerations). Since as-built site plans were not available from the owner, the proposed boring locations were chalked onto the asphalt pavement between four and five-feet from the edge of the concrete pad. As a conservative measure, the first two borings (located on the southern side of the tank farm) were sited an additional two-feet from the pad. Mr. Lapp, Jr. reviewed and verbally approved the proposed boring locations with the assistance of site photographs taken during the upgrade of the UST system.

Seven borings (SB-1 through SB-7) were conducted sequentially, starting on the southern side of the tank farm and then moving to the eastern and northern side locations. Each boring was advanced by Terra Probe using direct-push drilling techniques and the soil cores were visually inspected for staining and field screened with a photo-ionization detection (PID) instrument by ECM. The results from the field screening were used to select soil sampling intervals and ground water sampling locations. One soil sample was collected from each boring at the target tank invert depth (approximately 11.5 to 12.0 feet below grade). A second soil sample (14.0 to 14.5 feet below grade) was collected at the S-6 boring location based on results from the field screening during advancement of this boring; specifically, elevated PID readings and observations of a slight odor and sheen. Soil samples were collected directly from the cores using NJDEP methanol preservation sampling techniques for VO+10; a second aliquot was collected of each sample for lead analyses. Ground water samples were collected via HydroPunch methods from borings SB-4, SB-6, and SB-7, based on noted field conditions.

The boring program was suspended during the completion of the SB-7 location on account of indication from the property owner that part of the UST system may have been damaged during drilling operations.

ANALYTICAL RESULT SUMMARY

A copy of the analytical results is provided in Attachment I; the results for the soil samples are summarized on Table 1. Review of the soil results indicated the detection of tertiary butyl alcohol (TBA) at estimated concentrations (below the laboratory quantitation limit [LQL]) in the SB-1 and SB-2 samples. Similarly, methyl tertiary butyl ether (MTBE) was reported at estimated concentrations (below the LQL) in the SB-2 and SB-6 samples. MTBE was detected above the LQL, at a reported concentration of 2.7 parts per million (ppm) in sample SB-1. The NJDEP Impact to Ground Water soil cleanup criterion for MTBE is 3.1 ppm. Lead was reported in all of the soil samples, with the exception of the SB-6/11.5-12.0 sample, at concentrations ranging from 3.1 ppm to 15.5 ppm. The NJDEP Residential Direct Contact soil cleanup criterion for lead is 400 ppm.

The ground water results are summarized on Table 2. Review of these results indicated that MTBE was detected in the SB-4 ground water sample at a concentration of 19 parts per billion (ppb), below the NJDEP Ground Water Quality Standard (GWQS) of 70 ppb. Lead was reported in the SB-4 ground water sample at 468 ppb, above the NJDEP 10 ppb GWQS for lead.

Benzene, toluene, ethylbenzene and xylene (BTEX compounds) were reported in the SB-6 ground water sample, of which benzene was reported at a concentration (29 ppb) above the NJDEP GQWS of 1 ppb for benzene. Similarly, TBA and MTBE were also reported at concentrations above the respective NJDEP GWQS. The reported TBA and MTBE concentrations (and compound-specific NJDEP GWQS) for the SB-6 sample were 2,100 ppb (GWQS of 100 ppb) and 460 ppb (GWQS of 70 ppb). Tentatively identified compounds were reported at a total concentration of 57 ppb, below the NJDEP guideline of 500 ppb for synthetic organic compounds. Lead was also reported above the NJDEP GWQS of 10 ppb for lead in the SB-6 ground water sample at a concentration of 987 ppb.

The results for the ground water sample collected from the SB-7 location indicated that benzene, MTBE, and TBA were reported above the respective NJDEP GQWS at concentrations of 190 ppb, 5,100 ppb and 1,400 ppb, respectively. The remainder of the BTEX compounds were reported at concentrations below the compound-specific GWQS. Tentatively identified compounds were reported at a total concentration of 2,270 ppb, above the NJDEP guideline for synthetic organic compounds of 500 ppb. This sample was not analyzed for lead. It should be noted that the SB-7 ground water sample was collected at the location and after the apparent breach in the tank

system. The discharge response efforts associated with the apparent UST breach were outside the scope of the authorized Phase II ESA and are therefore not documented herein.

INTERIM CONCLUSIONS

A portion of the proposed Phase II ESA was completed at the subject property. Conclusions relative to the findings of this work are summarized below.

- The original (northern) portion of the current site building and the two gasoline distribution pump islands were apparently constructed before 1962.

- The facility has historically been serviced by the municipal water supply and did not have an on-site well.

- The site building is heated by fuel oil, currently supplied by an AST. A former heating oil UST was abandoned in place along the northern side of the building, reportedly during the late-1990's; no information was available at the time of the assessment relative to the closure of, or potential impact from, this UST.

- Three former in-ground hydraulic lifts were previously located on-site; no information was available at the time of the assessment relative to the closure of, or potential impact from, these lifts.

- Two, four-inch diameter floor drains were noted, the connections of which could not be confirmed at the time of the assessment. The drain in the original portion of the building may have been historically connected to the former on-site septic system. No information was available at the time of the assessment relative to the closure of, or potential impact from, the septic system.

- Catch basins were noted in the rear of property, which reportedly drain to a surface swale.

- One above ground storage tank (AST) was located on-site for waste oil, which was reportedly (by the property owner) never stored in an UST. The reported absence of a former waste oil UST was not confirmed during the assessment.

- Four, 6,000-gallon USTs are currently located on-site, which were reportedly upgraded during 1998/1999.

- The findings from the Phase II boring program around the gasoline tank farm reported benzene, TBA, MTBE, and lead results for the SB-6 ground water sample above the respective NJDEP GWQS. The lead level in the SB-4 ground water sample was also reported above the NJDEP GWQS. MTBE, TBA, and the BTEX compounds are considered common constituents of gasoline; lead was a common gasoline constituent prior to its phase out circa 1979. As the SB-4 and SB-6 ground water samples were both collected prior to the apparent UST breach during the advancement of the SB-7 location, the data document evidence of a previous (historical) discharge and an impact to ground water in the area of the gasoline USTs. The elevated lead concentrations may also be indicative off a historic discharge (i.e., a discharge prior to the phase out of lead as a gasoline constituent).

The findings of the partially completed Phase II ESA identified several potential areas of environmental concern that have not yet been assessed and/or addressed, as outlined above. The completion of the authorized Phase II activities was suspended at the direction of the property owner's legal representative. As a result, the proposed soil borings associated with the areas of concern outlined above (including the borings around the existing and previous pump islands) were not completed and therefore, an assessment of these areas cannot be currently provided. The results of the boring program completed indicate a historic discharge in the area of the gasoline USTs. Continuation of the assessment activities in the identified areas (including further assessment of the historic discharge) is recommended. Response efforts were also conducted relative to the apparent UST breach to remove and mitigate residual product; however, it is anticipated that additional efforts would be required.

Sincerely,

ENVIRONMENTAL COMPLIANCE MONITORING, INC.

Alex Yankaskas, C.P.G.
Director, Consulting Services

TABLES

Table 1
Analytical Hits Summary for Soil Samples – August 2001
North Brunswick Gulf
Project #1269

Sample Identification Sample Depth (feet) Laboratory Identification Sample Date Sample Time	SB-1 11.5 – 12 299666 8/30/01 09:15	SB-2 11.5 – 12 299667 8/30/01 09:50	SB-3 11.5 – 12 299668 8/30/01 10:20	SB-4 11.5 – 12 299669 8/30/01 11:05	SB-5 11.5 – 12 299671 8/30/01 12:05	SB-6 11.5 – 12 298014 8/30/01 12:45	SB-6 14 – 14.5 299672 8/30/01 13:05	SCC (mg/Kg)
VOLATILE ORGANICS								
Tertiary Butyl Alcohol	2.9 J	2.1 J	ND	ND	ND	ND	ND	--
Methyl Tertiary Butyl Ether	2.7	0.230 J	ND	ND	ND	ND	0.360 J	3.1
Tentatively Identified Compounds	0.0	0.0	0.0	0.0	0.0	21.4	0.0	--
METALS								
Lead	15.5	3.1	12.6	9.2	4.6	ND	12.4	400

Notes:

All results reported in milligrams per kilogram (mg/kg).

SCC : The most stringent of the NJDEP Residential Direct Contact (RDC-SCC), Non-Residential Direct Contact (NRDC-SCC) and Impact to Ground Water (IGW-SCC) Soil Cleanup Criteria (SCC) for listed compounds).

J : Reported value is below the laboratory method detection limit.

ND : Not Detected above laboratory method detection limit and associated criteria.

-- : No NJDEP SCC listed for associated compound.

Table 2
Analytical Hits Summary for Water Samples – August 2001
North Brunswick Gulf
Project #1269

Sample Identification Laboratory Identification Sample Date Sample Time	SB-4 (W) 299670 8/30/01 11:20	SB-6 (W) 298015 8/30/01 13:15	SB-7 (W) 298016 8/30/01 14:30	GWQS (µg/L)
VOLATILE ORGANICS				
Benzene	ND	***29***	***190***	1
Toluene	ND	1.9	46	1,000
Ethylbenzene	ND	6.3	81	700
Xylenes (Total)	ND	4.7	55	1,000
Tertiary Butyl Alcohol	ND	***2,100***	***5,100***	100
Methyl Tertiary Butyl Ether	19	***460***	***1,400***	70
Tentatively Identified Compounds	0.0	57	***2,270***	500*
METALS				
Lead	***468***	***987***	NT	10

Notes:

All results reported in micrograms per liter (µg/L).

GWQS : NJDEP Ground Water Quality Standard.

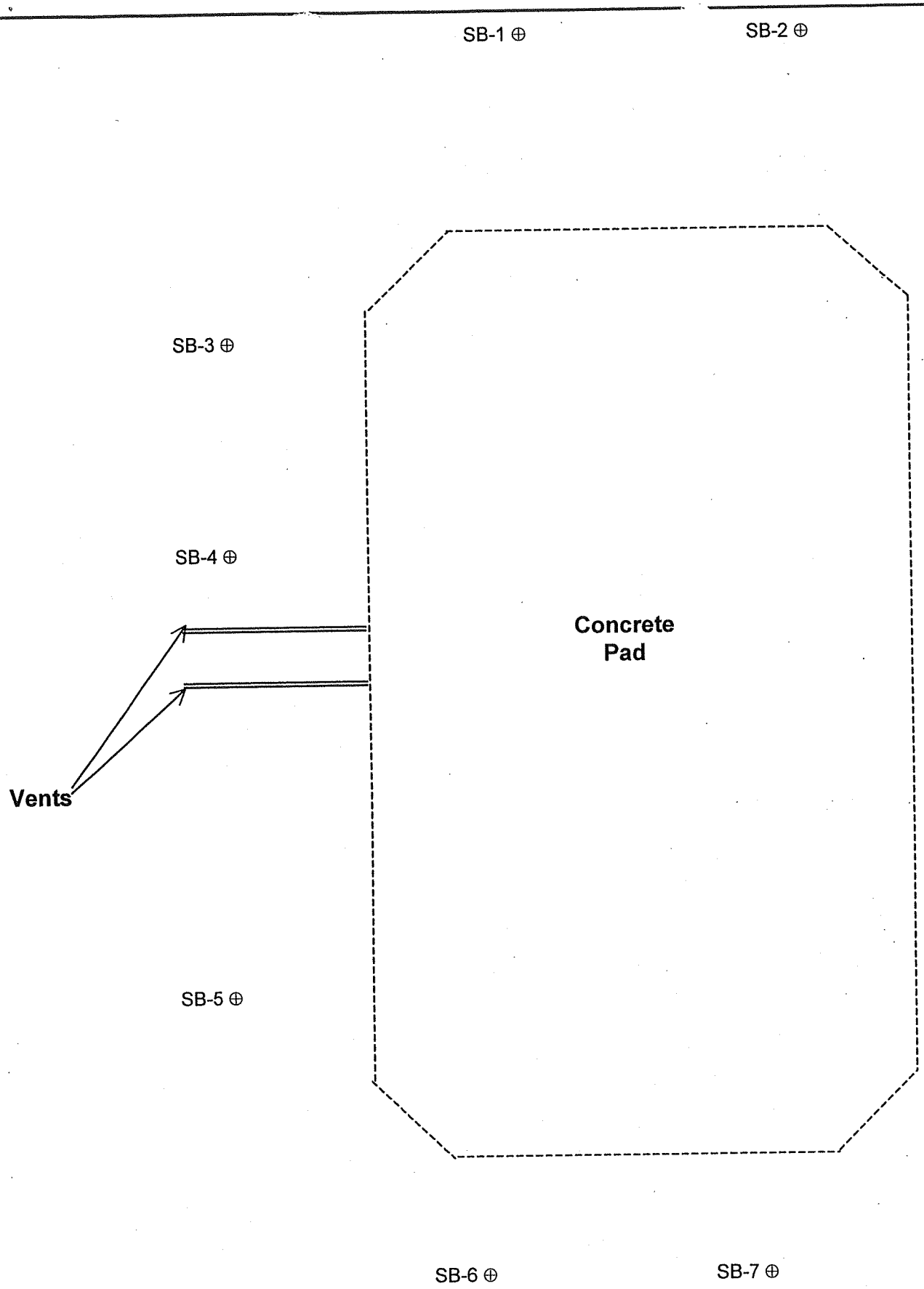
BOLD : Reported value exceeds the listed associated GWQS for that compound.

ND : Not Detected above laboratory method detection limit and associated criteria.

NT : Not Tested.

500* : GWQS is relative to the total non-carcinogenic synthetic organic compounds (SOCs).

FIGURES



Legend:

⊕ - Sample Location.

ECM

environmental compliance monitoring, inc.

349 Route 206 • Hillsborough, NJ • 08844 • 908-874-0990

Date: 10/30/01	Approximate Scale: 1" = 5'
ECM Project # 1269	North ↘

FIGURE 1

SOIL SAMPLE LOCATION PLAN

NORTH BRUNSWICK GULF SERVICE STATION

LABORATORY REPORTS INCLUDING SUMMARY SHEETS, AND QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) DOCUMENTATION

(PRESENTED IN ORIGINAL REPORT ONLY)