



607 INDUSTRY ROAD
LOUISVILLE, KENTUCKY
40208

PHONE 502-634-4753 FAX 502-635-7775

May 20, 2009

Mr. Jim Bottom
Emergency Management Agency
2nd Floor
410 South 5th Street
Louisville, KY 40202
Fax: 502-574-4606

Re: Emergency Event of May 13, 2009

Dear Mr. Bottom:

American Cold Storage Louisville Division is providing additional follow-up information related to the emergency event of May 13, 2009. The event occurred at the 607 Industry Road, Louisville, Kentucky facility. All emergency actions have been completed, repairs have been made to the ammonia refrigeration system, and the facility remains shut down at this time.

Attached you will find a summary of information (post emergency) obtained from personnel interviews and data collected from the event. Should you need additional information, please do not hesitate to contact me at (502) 634-4753.

Sincerely,


Gus Lazrovitch
Warehouse Manager
American Cold Storage

GL/slb

Enclosures

Preliminary Emergency Response Action Report

**American Cold Storage
607 Industry
Louisville, Kentucky**

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Emergency Information Summary

Incident:

Anhydrous ammonia release from ammonia refrigeration system

Date & Time:

May 13, 2009 at approximately 4:00-4:20 PM (EST)

Location of Incident:

American Cold Storage
Louisville Division
607 Industry Road
Louisville, Kentucky 40208

Location of Incident at Facility:

Inside Freezer Room #1. Affected Freezer Rooms #1,2,3, and 5.

Type of Incident:

Release of anhydrous ammonia with injuries to maintenance personnel.
Two (2) fatalities.

Type of Material:

Anhydrous ammonia
CAS# 7664-41-7

Estimated Quantity Released:

Original estimate was 4,000 pounds.
Reportable Quantity – 100 pounds.

Remaining material was vacuumed from system into Tanner Industries ammonia tanker.
Tanker was taken off-site and weighed. Weight:

Collected material weighed 2,520 pounds. As subject refrigeration system is a critical system (too much ammonia is as detrimental to system operation as too little), the maximum charge to system would be 8,000 pounds.

$8,000 - 2,520 = 5,480$ pounds.

List all Regulatory Agencies Contacted / Present at Incident:

Name of Agency	Call # / Telephone #	Date / Time
National Response Center 1-800-424-8802	Case # 905556 Mr. Kevin Williams	5/14/09 9:28AM
Kentucky Department of Environmental Protection	Case# 2295591 Mr. Rodney Polley	5/14/09 9:50 AM
Kentucky Emergency Planning Commission	Case # 20091892	Initial: 5/13/09, 6:17PM Follow-up: 5/14/09, 10:02AM
Louisville & Jefferson County Emergency Planning Commission	Jim Bottom (911)	Initial: 5/13/09, 4:20PM Follow-up: 5/14/09, 10:15AM
Louisville & Jefferson County Health Department	David Reed (911) 574-6650	5/13/09 4:20PM
Louisville Fire Department	(911)	5/13/09 4:20PM
Louisville & Jefferson County Metropolitan Sewer District	(911) 540-6972 Written Response: Pending	5/13/09 4:20PM
Kentucky OSHA	Susan Draper	5/14/09 11:00AM
EPA Region 4	Ben Franco	5/14/09 10:10AM
Chemical Safety Board Washington D.C.	Mary Nikityn	5/14/09 11:30AM

Adjacent Properties Impacted:

No evacuation or special care was required for adjacent properties. No complaints were received by facility from adjacent properties.

Evacuation:

An evacuation was initiated by the facility for facility personnel at the time of the 911 call (4:20PM). Approximately 13 personnel were evacuated from the facility in accordance with the facility evacuation plan. Personnel from the facility and one (1) truck driver evacuated to the muster area in the southeastern parking lot adjacent to the facility. No injuries were noted to these individuals. In addition, the Otis Spunkmeyer Company (cookie distributor) was told to evacuate from the space rented from American Cold Storage.

Environmental Media Affected:

No releases were observed to soil, surface water, groundwater, or sewers at the time of the release. Due to the physical properties of anhydrous ammonia, only air was affected. Ammonia liquid quickly changes to a gas when pressure is released. Ammonia gas is less dense than air and the material quickly rises and dissipates.

The building (Room #1) is a totally enclosed freezer with temperatures at approximately -5°F. The cold temperature and building (sealed with plastic) serve to mitigate the release. Fire Department sealed other portions of facility and additional sealing was installed.

Monitoring of Release:

The Fire Department HAZMAT team performed initial monitoring of the scene. (Pending written Fire Department report). Verbally, Fire Department personnel described the initial readings in the thousand parts per million. Due to the volume of the release, some concern was expressed by the Fire Department of potential Lower Explosion Limit (LEL) (ammonia has a LEL of 16% in air) but no readings of this level were found.

On May 15, 2009 US Environmental Services (USES) started monitoring the building. Readings in several hundreds (400-500 ppm) were initially encountered in the building interior. See attached results for location and dates of readings.

In addition, the Center for Toxicology and Environmental Health, LLC (CTEH) were on-site from May 16 – May 18, 2009 taking area samples. In addition, CTEH utilized a mobile unit to drive around adjacent neighborhoods checking levels. A summary of the results is attached. The highest reading was observed approximately 25 feet from the building door at a level of approximately 25 ppm.

No indication of significant off-site impacts were observed by their monitoring.

Current Conditions:

Currently (as of May 19, 2009), the system has had ammonia removed and the system is maintained at a vacuum condition. Replacement of the valve has been completed.

Some levels of ammonia exist due to ice formation in the warehouse. The ice is in the removal state. Inventory is in the process of evaluation.

Disposal of Material:

The residual ammonia was remove by Tanner Industries and has not been returned to the system (2,520 pounds).

The ethylene glycol system was contaminated by the ammonia release and approximately 3,000 gallons was disposed of at the Outer Loop Landfill in Jefferson County, Kentucky. In addition, the response equipment (tyvek, gloves, pads) were also disposed of at the Outer Loop Landfill.

Estimates of the scrubber discharge were approximately 3,000 pounds of ammonia discharged to the Louisville Metropolitan Sewer District (MDS). Personnel from MSD were present and monitored the discharge. The monitoring demonstrated pH ranges of 8.0-9.0.

Injuries: Two (2) injuries which resulted in fatalities.

Name	Title	Injury
Damon Shanks	Maintenance Technician	Fatality
Robert Corbin	Maintenance Technician	Fatality

1. Damon Shanks – Mr. Shanks was removed from the building by Fire Department at 5:17PM. Mr. Shanks was found on the scissors lift with obvious chemical burns to his front extremities. He was decontaminated on-site by Fire Department personnel and CPR was administered. He was transferred to the University Of Louisville Hospital by ambulance at 5:34PM.
2. Mr. Corbin was removed from the building by Fire Department personnel at 5:10PM. He was decontaminated on-site by Fire Department personnel and CPR was administered. He was transferred to the University of Louisville Hospital by ambulance at 5:32PM.

Incident Description:

On Wednesday, May 13, 2009 at approximately 4:00PM, a release of ammonia occurred during the maintenance operations of the ethylene glycol system at the evaporator in Freezer Room #1. The ethylene glycol (glycol) system is used to defrost the evaporators. The repairs involved the replacement of the glycol pump in the evaporator pan on the system. The ethylene glycol system is a separate system and involves no ammonia handling or transfer. Ammonia is located in the evaporator directly adjacent to the glycol system.

Maintenance Technicians Damon Shanks and Robert Corbin were working as a team to make the necessary repairs. This repair is a routine task for maintenance personnel at ACS. The location of the repair was located near the ceiling (location of evaporator) and the crew was utilizing a scissor lift with safety basket to perform the operation. Mr. Damon Shanks was operating from the scissor lift to make the repair with Mr. Robert Corbin located on the floor for assistance and observation.

After removing the failed pump earlier in the shift, Mr. Gus Lazrovitch (Facility Manager and Refrigeration Engineer) and Mr. Shanks discussed the functioning and necessary tasks to install the replacement pump. The last such discussion was held around approximately 3:00PM. After this briefing, Mr. Shanks and Mr. Corbin returned to Freezer Room #1 to re-install the ethylene glycol pump.

At approximately 4:00PM, Mr. Gus Lazrovitch received a call from the loading docks indicating the smell of ammonia in the area (Door 18 and 19). Mr. Lazrovitch immediately began to investigate the potential for a release in the area with Mr. Matthew Sprinkler. After checking this area, Mr. Lazrovitch went to check the refrigeration engine room for a possible cause. Nothing was detected at which time Mr. Lazrovitch sent Mr. Sprinkler to check on the maintenance team in Freezer Room #1. Upon opening

the door and noticing the room was full of ammonia vapors, Mr. Sprinkler immediately notified Mr. Lazrovitch who proceeded to the room. Upon observation of the room's condition and attempting to contact the maintenance team, Mr. Lazrovitch declared an emergency evacuation and notified all individuals to evacuate per the facility procedures. ACS personnel contacted 911 and evacuated the building. Mr. Lazrovitch began assigning individuals per the facility emergency plan to implement all necessary actions per the facility emergency plan.

At approximately 4:23PM the Louisville Fire Department Major arrives on scene and HAZMAT units were dispatched and arrived at 4:36PM. Fire personnel set up appropriate response equipment and entered the building at 5:05PM.

Refer to other portions of report for removal of maintenance personnel and remedial actions.

Investigation of Cause of Incident:

After the levels of ammonia vapor had been reduced to levels below OSHA Permissible Exposure Limits (PELs); a group consisting of Mike Gettinger of (USES); John Mattingly (ACS Boonville Engineer); Jeff Bull (Summit Refrigeration), and Kevin Sullivan (Fisher Refrigeration) entered Freezer Room #1 to investigate the cause of the release and to make necessary repairs in order to pull complete vacuum on system.

Upon review of the scene, it was determined that a valve which was connected to the anhydrous ammonia system of the evaporator had been removed. The subject valve was located approximately 200 inches from the location of a one-inch threaded nipple pipe on the evaporator. The threads of the valve and nipple were examined and it was determined it had been removed; not damaged or struck during the ethylene glycol pump repair. The investigation why the valve was removed is still on-going.

Removing this valve would have released anhydrous ammonia. Pressure on the system is estimated at between 25-50 psi gauge. The sudden release of material could account for the location of the valve and the associated chemical burns to Mr. Shanks.

Based on the available information from Fire Department personnel, it appears that Mr. Corbin was attempting to assist the escape of Mr. Shanks when he was overcome with ammonia vapors. Until the final Fire Department report is issued, this information was obtained by work of mouth and is still pending.

List of Agencies to Visit Facility:

Date	Agency
5/13/09	Louisville Metro Health Department
5/13/09	Louisville Metro Emergency Management
5/13/09	Louisville Metro EMS
5/13/09	Louisville Metro Police
5/13/09	Louisville Fire Department Aerial Unit
5/13/09	Louisville Fire Department Hazmat Unit
5/13/09	Louisville Jefferson County Metropolitan Sewer District
5/13/09	Norfolk Southern Railroad Police
5/13/09	EPA Emergency Response (Federal)
5/14/09	Kentucky OSHA (11:40AM)
5/14/09	Kentucky Department of Environmental Protection
5/14/09	EPA Emergency Response (Federal)
5/14/09	Louisville Fire Department
5/14/09	Louisville Fire Department Hazmat
5/14/09	Louisville Jefferson County Metropolitan Sewer District

Timeline

(All times Eastern Standard)

Date and Time	Item
5/13/09 4:00 PM	Facility manager notified of ammonia smell on loading dock by ACS personnel.
5/13/09 4:00 – 4:20 PM	Facility manager immediately investigates. Refrigeration engine room checked; then freezer room where maintenance operations on ethylene glycol system was in operation; room full of vapor.
5/13/09 4:20 PM	Evacuation of all facility personnel (13 individuals) and call to 911.
5/13/09 4:23 PM	Fire Department Major in area; arrives on scene and notices release.
5/13/09 4:35 PM	Fire Department arrives on scene.
5/13/09 4:35-5:05 PM	Hazmat Unit prepares for entry.
5/13/09 5:05 PM	Hazmat Team entry into building in Level A.
5/13/09 5:10 PM	First ACS employee is removed from building, decontaminated by Fire Department, and CPR started.
5/13/09 5:17 PM	Second ACS employee removed from building, decontaminated by Fire Department, and CPR started.
5/13/09 5:32 PM	First employee is transferred to University Hospital.
5/13/09 5:34 PM	Second employee is transferred to University Hospital.
5/13/09 5:34 PM	Fire Department remains on-scene until after ammonia has been scrubbed and levels are below concern.
5/13/09	ACS, Summit Refrigeration, and Fisher Refrigeration remain with system during night.
5/14/09 6:00 AM	Tanner Industries supply tanker to remove remaining ammonia from system.
5/14/09	Fire Department continues to monitor situation; no entry by anyone except HAZMAT personnel.
5/14/09 5:00 PM	USES personnel (nine in crew) mobilize to start air monitoring.
5/15/09 7:00 AM	<ul style="list-style-type: none"> USES personnel arrive at site and are briefed on situation by ACS personnel. USES starts air monitoring at multiple locations. USES meets with state and local regulatory personnel to plan ammonia removal, including plans for fabrication of scrubber unit.
5/15/09 11:14 AM	USES performs Level A entry for visual assessment and interior air monitoring (Ammonia 90-587 ppm).

Date and Time	Item
5/15/09 12:45 PM	USES begins scrubber fabrication.
5/15/09 6:00 PM	USES completes scrubber fabrication.
5/15/09 6:28 PM	Scrubber brought on-line, operating continuously by USES night crew.
5/16/09 7:00 AM	<ul style="list-style-type: none"> • USES makes Level B entry. Interior ammonia concentrations reduced by 50%. • Scrubber process modified by addition of PPV fans.
5/16/09 4:09 PM	USES makes Level B entry, ammonia levels still dropping.
5/17/09 7:00 AM	<ul style="list-style-type: none"> • USES makes Level B entry, ammonia levels reduced a further 50%. • USES attends planning meeting with regulatory and emergency service authorities; determination to open structure for more aggressive ventilation made, with periodic monitoring of site and continuous property boundary monitoring.
5/18/09 7 AM – 11 AM	<ul style="list-style-type: none"> • USES makes Level C entry, determines interior levels reduced a further 50%. • USES documents interior conditions and oversees repair by contractor. • Ventilation and monitoring continuing around the clock, including Freezer #3 due to restart.
5/19/09 7:00 AM	<ul style="list-style-type: none"> • USES on-site, interior ammonia levels below OSHA PEL. • USES removes ammonia-contaminated ice, conducts additional air monitoring.
5/19/09 2:00 PM	USES released by ACS.

Monitoring Results From Inside Building

Room # 1					
Date	Time	NH3 in ppm	Temp in ° F		Comments
5/15/09	11:17:00	486			Mid point
5/15/09	11:41:00	311			Rear of room
5/16/09	10:03:00	116			taken at 20' high
5/16/09	10:06:00	262			Mid point
5/16/09	10:41:00	175			taken at 20' high
5/16/09	10:52:00	310			Mid Point
5/16/09	16:15:00	243			Mid point
5/17/09	8:48:00	110			Mid point
5/17/09	18:37:00	140			At back door
5/18/09	9:05:00	59	39		Incident area
5/18/09	12:57:00	62	41		Mid point
5/18/09	16:31:00	44	49		Mid point

4

Room # 2

Date	Time	NH3 in ppm	Temp in ° F	Comments
5/15/09	11:26:00	587		Mid Point
5/16/09	10:22:00	163		Mid Point
5/16/09	16:23:00	200		Mid Point
5/17/09	8:59:00	126	18	Mid Point
5/17/09	14:50:00	105		At back door
5/17/09	18:03:00	90		At back door
5/18/09	13:03:00	46	32	Mid Point
5/18/09	16:38:00	56	33	Mid Point

Room # 3

Date	Time	NH3 in ppm	Temp in ° F	Comments
5/15/09	11:35:00	90		Mid Point
5/16/09	10:16:00	93		Mid Point
5/16/09	16:26:00	115		Mid Point
5/16/09	16:31:00	20		Near front doors
5/17/09	9:03:00	112		Mid Point
5/17/09	15:49:00	60	23	Mid Point after room was closed
5/17/09	18:22:00	55		At northerly back door
5/17/09	18:24:00	90		At southerly back door
5/18/09	8:15:00	46		Mid Point
5/18/09	13:09:00	35	27	Mid Point
5/18/09	16:44:00	46	26	Mid Point

Room # 5

Date	Time	NH3 in ppm	Temp in ° F	Comments
5/17/09	14:16:00	60	0	Near rear of room
5/18/09	8:14:00	53		Near rear of room
5/18/09	13:12:00	42	15	Near rear of room
5/18/09	16:46:00	42	16	Near rear of room

Summary of Remedial Response



REGIONAL HEALTH AND SAFETY OFFICE

1075 Mendell Davis Drive
Jackson, MS 39272

May 19, 2009

Reference: Executive summary of emergency response by United States Environmental Services, LLC May 15-19, 2009 at American Cold Storage 607 Industry Road, Louisville, KY

USES personnel began mobilization to Louisville, KY at approximately 17:00 May 15, 2009 with a crew of nine. USES personnel arrived on site at 07:00 May 16, 2009 and were briefed by American Cold Storage Personnel of the situation and needs. Air Monitoring was started at various points around site and continued throughout the incident. USES Project Manager and Chemist met with State and Local regulatory personnel onsite to plan for the removal of the Ammonia (NH₃) from the Facility which included building a scrubber unit out of an old refrigerator trailer. 11:14 USES crews made a Level A entry to assess the situation inside the freezers and to take air monitoring readings to determine current ammonia levels. The NH₃ levels varied from 90 to 587 ppm. The scrubber system fabrication began approximately 12:45 and was completed by 18:00; scrubbing operations began at 18:28 and continued throughout the night with a small night crew remaining on site to monitor the scrubber system. USES crews were back on sight at 07:00 May 16, 2009, a Level B entry was made to establish current ammonia levels and to determine the scrubber efficiency. NH₃ levels were found to have dropped significantly (approximately half of the initial levels found). It was determined that we could increase air flow by placing positive pressure ventilation (PPV) fans in the rear doors of the freezers which would increase the amount of NH₃ vapors being scrubbed. At approximately 16:09 USES crews made a level B entry to assess the efficiency of the scrubber with the PPVs and the NH₃ levels were dropping rapidly, scrubbing continued throughout the night with a USES night crew on site to monitor the operation. 07:00 Sunday May 17, 2009 USES crews are back on site, a Level B entry was made to establish current ammonia levels and to determine the scrubber efficiency. NH₃ levels were found to have dropped significantly again (approximately half of the NH₃ level of the afternoon before). After a planning meeting with all the regulatory and emergency service agencies it was determined that the NH₃ levels were low enough to begin opening the structure up and begin more aggressive ventilation with PPV fans and opening up the overhead doors. The NH₃ levels were monitored periodically throughout the day in the freezers with continuous monitoring of the fence line, the ventilation was continued through the night, the scrubber was shut down late in the day. Monday May 18, 2009 USES crews arrived on site at 07:00; a crew made a Level C entry to measure NH₃ levels inside of the freezers and determine efficiency of the ventilation process which again the NH₃ vapors had been cut in half and were now approaching the OSHA

PEL with a range from 42 to 60 ppm. USES personnel were asked to document the conditions found in the area of the ammonia leak in Freezer #1 and to oversee the repair of the leak (installation of a new valve) by the refrigeration contractor. Requests were made for photos, measurements and thread conditions of the valve and stub-out. This was completed at approximately 11:00. The ventilation was continued NH3 and temperature levels were monitored periodically throughout the day in the affected freezers with continuous monitoring of the fence line. Ventilation continued throughout the night and a USES crew monitored NH3 and temperature levels of freezer # 3 as it had been closed and cooling system restarted. Tuesday May 19, 2009 USES crews are back on site at 07:00, the ventilation of the freezers overnight has lowered the NH3 levels to below the OSHA PEL as long as ventilation fans were running especially in freezer room # 1. USES crew removed the NH3 contaminated ice that had formed on the floors of freezers 1 and 2. After performing more air monitoring throughout the affected freezers USES personnel were released from the site by American Cold Storage management at approximately 14:00.

If you have any questions regarding this matter please contact me at 601-278-7835.

Respectfully,

Michael Gettinger
Director of Emergency Response Safety
And Special Operations

Summary of Investigation of Release and Repair of System



REGIONAL HEALTH AND SAFETY OFFICE

1075 Mendell Davis Drive
Jackson, MS 39272

Monday, May 18, 2009

Reference: Summary of Key Events during the documentation of conditions and repair of an NH₃ leak in Freezer Room #1 at the American Cold Storage facility Louisville, KY

- 08:35 USES was asked to document the conditions found in the area of the ammonia leak in Freezer #1 and to oversee the repair of the leak (installation of a new valve) by the refrigeration contractor. Requests were made for photos, measurements and thread conditions of the valve and stub-out.
- 09:05 USES personnel enter freezer #1 and perform air monitoring, using a Gastec 3L tube with a 50ml draw (high range) NH₃ 59ppm
- 09:08 Begin photo documentation of area (see photo log) where incident occurred
- 09:10 Located the valve that was apparently removed from the evaporator, valve is at a point on the floor that is 173-inches from the north end of rack frame number 1B13, this point is 215-inches from rack frame number 1B17 which is directly under the evaporator core where the valve apparently originated. The general layout was documented with photos and measurements from identifiable points such as numbered frame rack ends.
- 09:30 Ascended a ladder to gain access to the evaporator, personal fall arrest harness fall protection was used for personnel as the work and inspection was performed on top of a storage rack. Documented conditions found on or in the evaporator pan (see photos and log). The threads of the stub-out appear to be in good condition and able to be used, a new valve was installed by a refrigeration technician which will allow the system to be put into a vacuum condition
- 09:50 Repairs of the evaporator have been completed and photo documented, crews are ready to exit the building.

If you have any questions regarding this matter please contact me at 601-278-7835.

Respectfully,

Michael Gettinger CFPS
Director of Emergency Response Safety
And Special Operations



SITE DIAGRAM

LOADING DOCK

Front Wall

11'9"

NORTH RACKS

80' 67'

1B11

1B12

1B13

1B14

1B15

1B16

1B17

1B18

1A15

1A16

1A17

1A18

1A19

1A20

1A21

173"

Valve Found

215"

EVAP PAN

Valve was removed from Evaporator here

Photo Log

Photo Number	Disc Number	Date	Time	Description	Initials
ACS # 17		5/18/09	0908	Rack # where Valve was found	✓
ACS # 18		5/18/09	0908	General Area within rack 1813	✓
ACS # 20		5/18/09	0909	extension ladder position, Forklift w/ man basket	✓
ACS # 21		5/18/09	0910	extension ladder position	✓
ACS # 23		5/18/09	0910	Valve on floor, found under Rack # 1813	✓
ACS # 25		5/18/09	0911	Valve position AS recovered	✓
ACS # 26		5/18/09	0912	Ladder position in relation to Evaporator	✓
ACS # 29		5/18/09	0913	Valve position in relation to front of rack	✓
ACS # 30		5/18/09	0920	MAN lift	✓
ACS # 31		5/18/09	0928	MAN lift + forklift relation to racks	✓
ACS # 35		5/18/09	0931	Stubout for oil Drain of evaporator	✓
ACS # 36		5/18/09	0931	Tools and other valves etc on Evap-Pan	✓
ACS # 37		5/18/09	0931	Tools and equipment on the Evap-Pan	✓
ACS # 47		5/18/09	0936	Stubout + High pressure (liquid line)	✓
ACS # 48		5/18/09	0936	Southeast of Evaporator	✓
ACS # 49		5/18/09	0941	Thread condition of stub-out	✓
ACS # 51		5/18/09	0942	Thread condition of stub-out	✓
ACS # 52		5/18/09	0948	New Valve installed	✓

Project# 060-09-0176

Client AMERICAN COLD STORAGE

Location Freezer Rem #1

0815

Midpoint Run 3 Gaster 3L
13 ppm $2.6 \times 1.35 = 46$ ppm

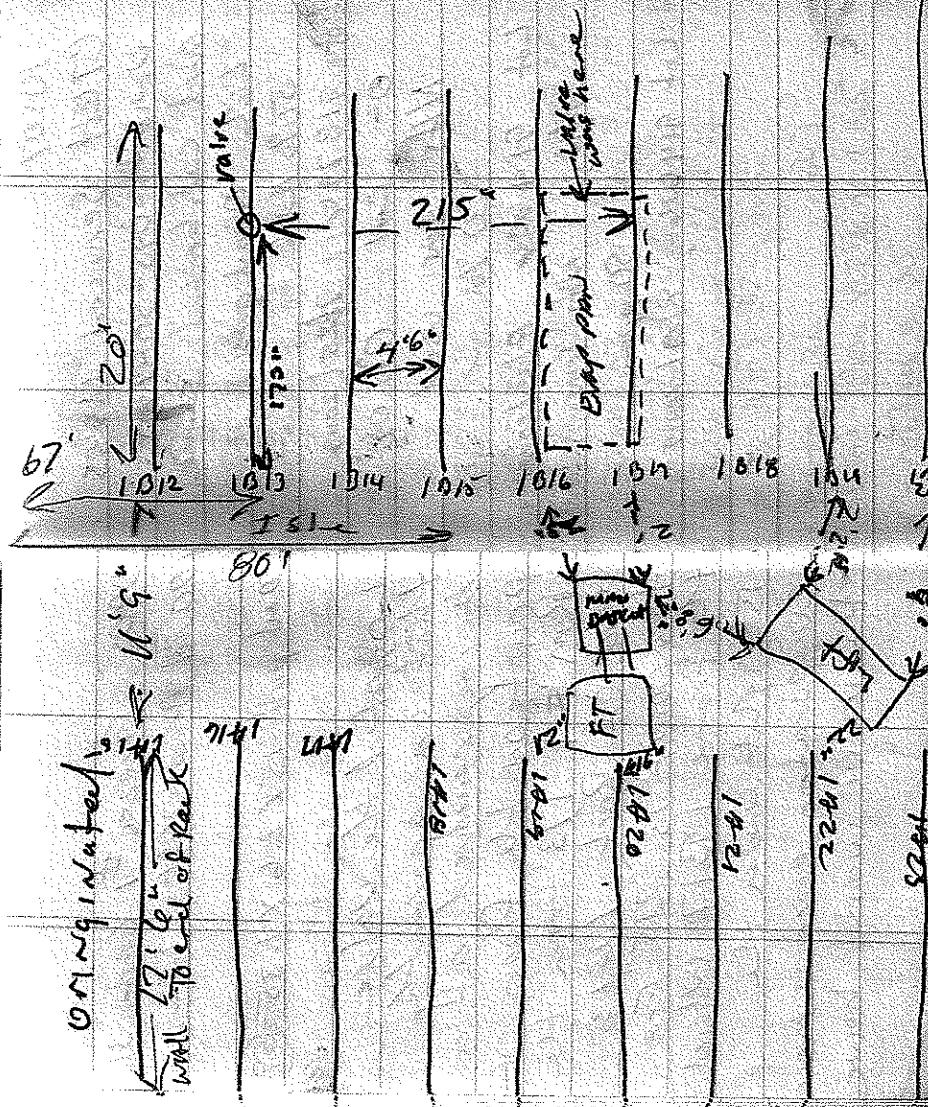
0835 I was asked to
document as much info
as possible in Run #1
with the staff of ACS
while they replace a
plug in and NH_3 line.

Photos, measurements etc
where valve is found
thread cond.

0905 Freezer #1 Gaster 3L
100 ml Draw 39°F 32°F

50 ml pull $15 \times 2.6 \times 1.35 = 59$

Located the valve
that was apparently
being removed at a
point on the floor of
Run #1 173" from the
end of Rack 1B13
this point is 215" from
the frame 1B17 which
is right under the
evaporator core where
the valve would have



Rm #8 near back door

1312

MR 38

Gastec 3L

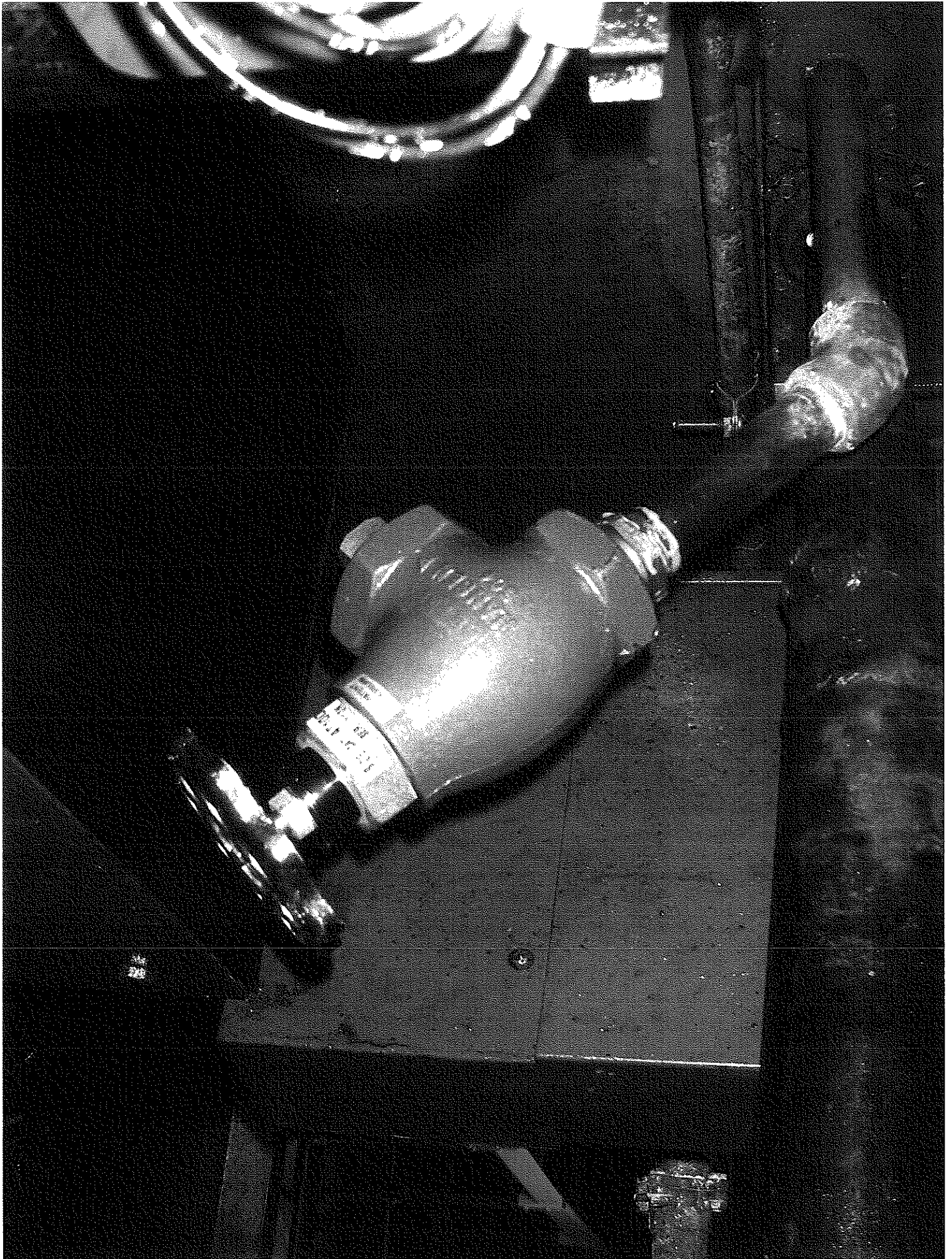
15°F

50 ml 12-13 ppm $\times 2.6 \times 1.35$

Corrected to 42 ppm

* Continuation of Valve
Location & Repair ~~Report~~
We Assembled a ladder
to gain access to the
evaporator @ Approx 0930
engaged fall protection
and documented condition
found on the evaporator
pan (see photos.)
the threads of the stubout
appear to be in good cond.
we will install a new
valve to allow the
Refrigeration Co. to
pull a vacuum
on the sys.
0950 Repairs are complete

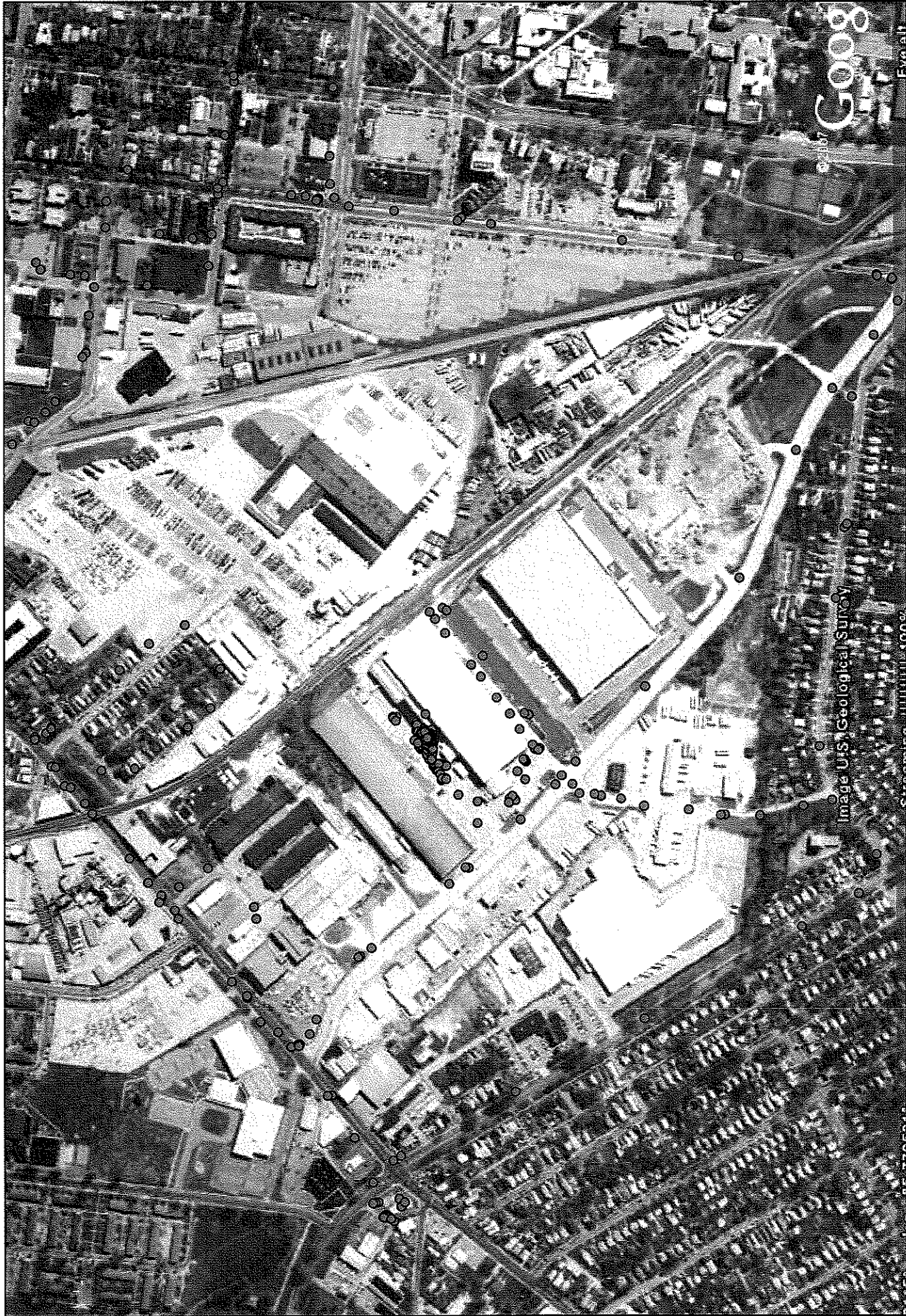





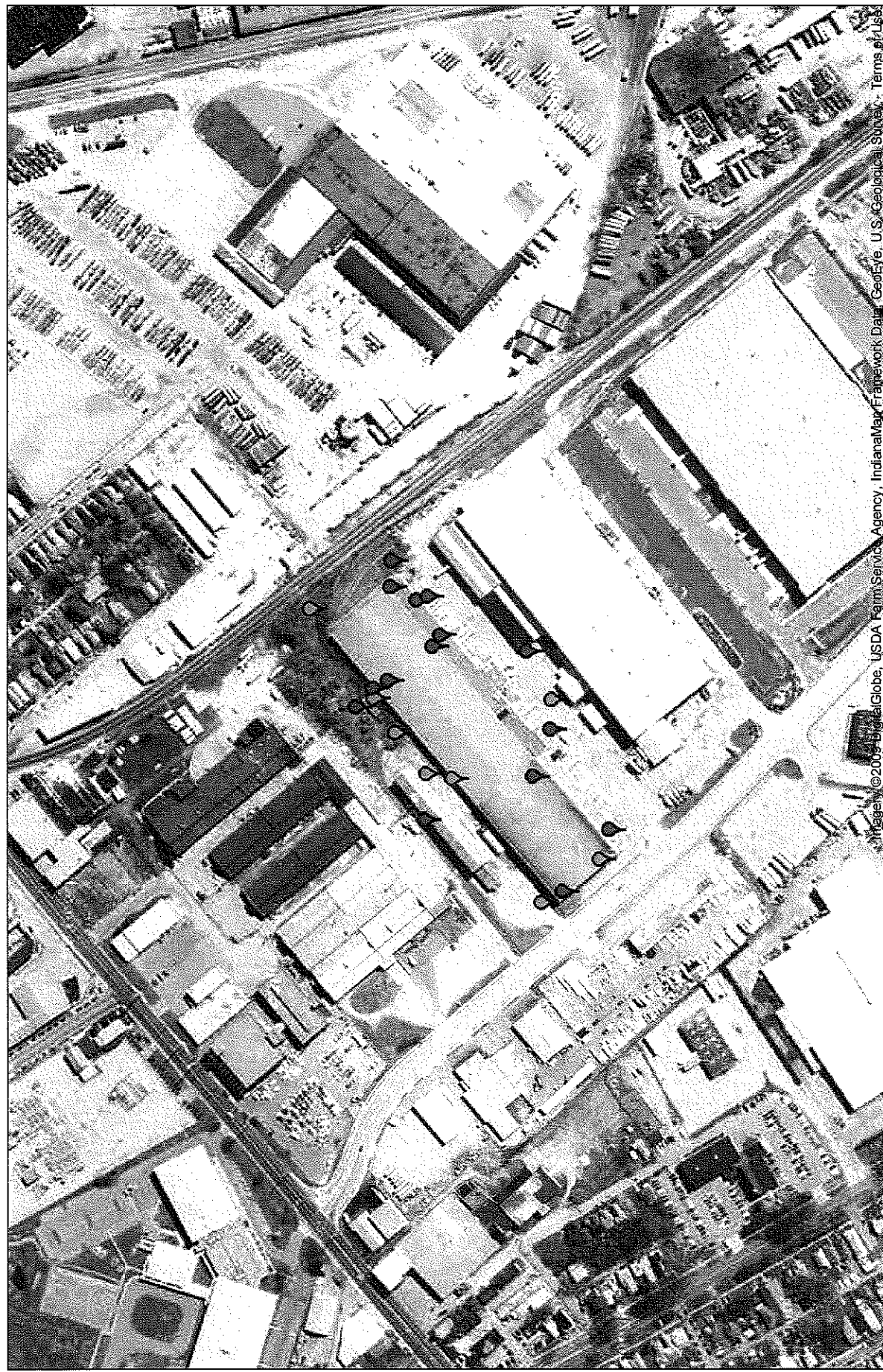
Area Monitoring Results

Daily

AreaRAE Real Time Readings				Manually Collected Real Time Readings			
Analyte	Average	Maximum	Count	Analyte	Average	Maximum	Count
Ammonia	0.02	0	6516	Ammonia	0.6	2	24
LEL	0	2.4	5347				
O2	20.9	20.9	5347				
			17210				



Community AreaRAE Unit	Legend ● Sampling Locations	 0 0.05 0.1 0.2 Miles	CTEH	American Cold Storage
			Project No. 4781	Louisville, KY
				Jefferson County May 16, 2009



Imagery © 2009 DigitalGlobe, USDA Farm Service Agency, IndianaMap/Framework Data, GeoEye, U.S. Geological Survey, Terms of Use

Legend

- 0700 - 1900
- 1900 - 0700



City: Louisville

State: Kentucky

Printed: 05-17-2009

Daily

AreaRAE Real Time Readings				Manually Collected Real Time Readings			
Analyte	Average	Maximum	Count	Analyte	Average	Maximum	Count
Ammonia	0.22	22.2	34684	Ammonia	2.5	14	53
LEL	0	0	25905	Oxygen	20.9	20.9	7
O2	20.9	20.9	25905	LEL	0	0	7
			86494				

Total: Includes all readings until last software backup

AreaRAE Real Time Readings				Manually Collected Real Time Readings			
Analyte	Average	Maximum	Count	Analyte	Average	Maximum	Count
Ammonia	0.19	22.2	41251	Ammonia	2	14	81
LEL	0	0	31288	Oxygen	20.9	20.9	7
O2	20.9	20.9	31288	LEL	0	0	7
			103827				



Real-Time Air Sampling Summary
for 2009-05-17

Legend

- Sampling Locations
- S** Site

Client: American Cold Storage
City: Louisville
State: Kentucky
Project #: 4781
Printed: 05-18-2009

Scale: 0 0.125 0.25 0.5 Miles

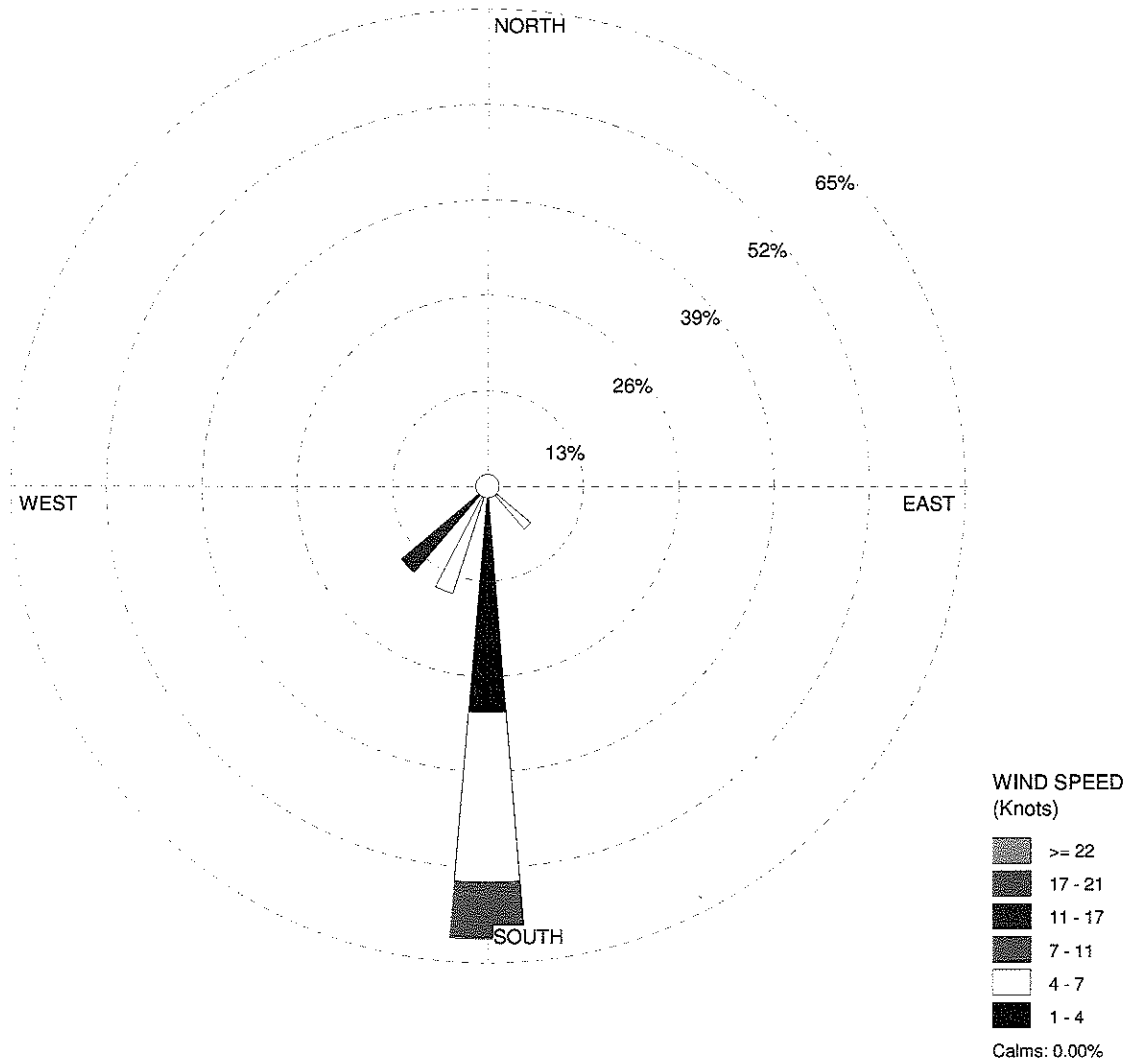
North Arrow:

WIND ROSE PLOT:

**Windrose from MADIS Meteorological Station (I-264 @ Taylor Blvd)
May 17, 2009**

DISPLAY:

**Wind Speed
Direction (blowing from)**



COMMENTS:

DATA PERIOD:

**2009
May 17 - May 17
00:00 - 23:00**

COMPANY NAME:

Center for Toxicology and Environmental Health

MODELER:

CALM WINDS:

0.00%

TOTAL COUNT:

13 hrs.

AVG. WIND SPEED:

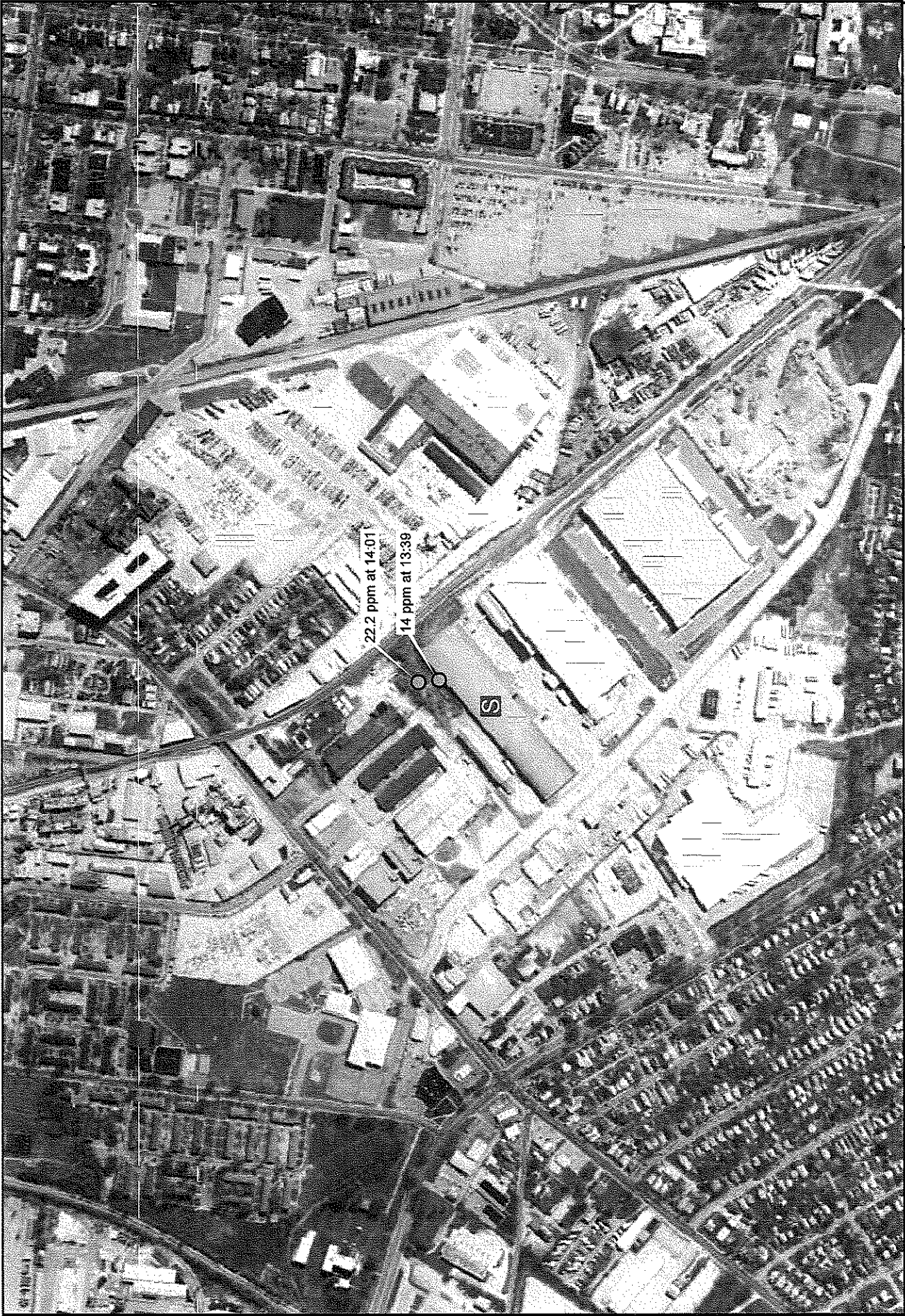
5.46 Knots

DATE:

5/18/2009

PROJECT NO.:

4781



Real-Time Air Monitoring
Maximum Detections
for 2009-05-17

Legend

Maximum Detections

Site

Client: American Cold Storage

City: Louisville

State: Kentucky

Printed: 2009-05-18

00.050.10.2 Miles

Project #:
4781




Daily

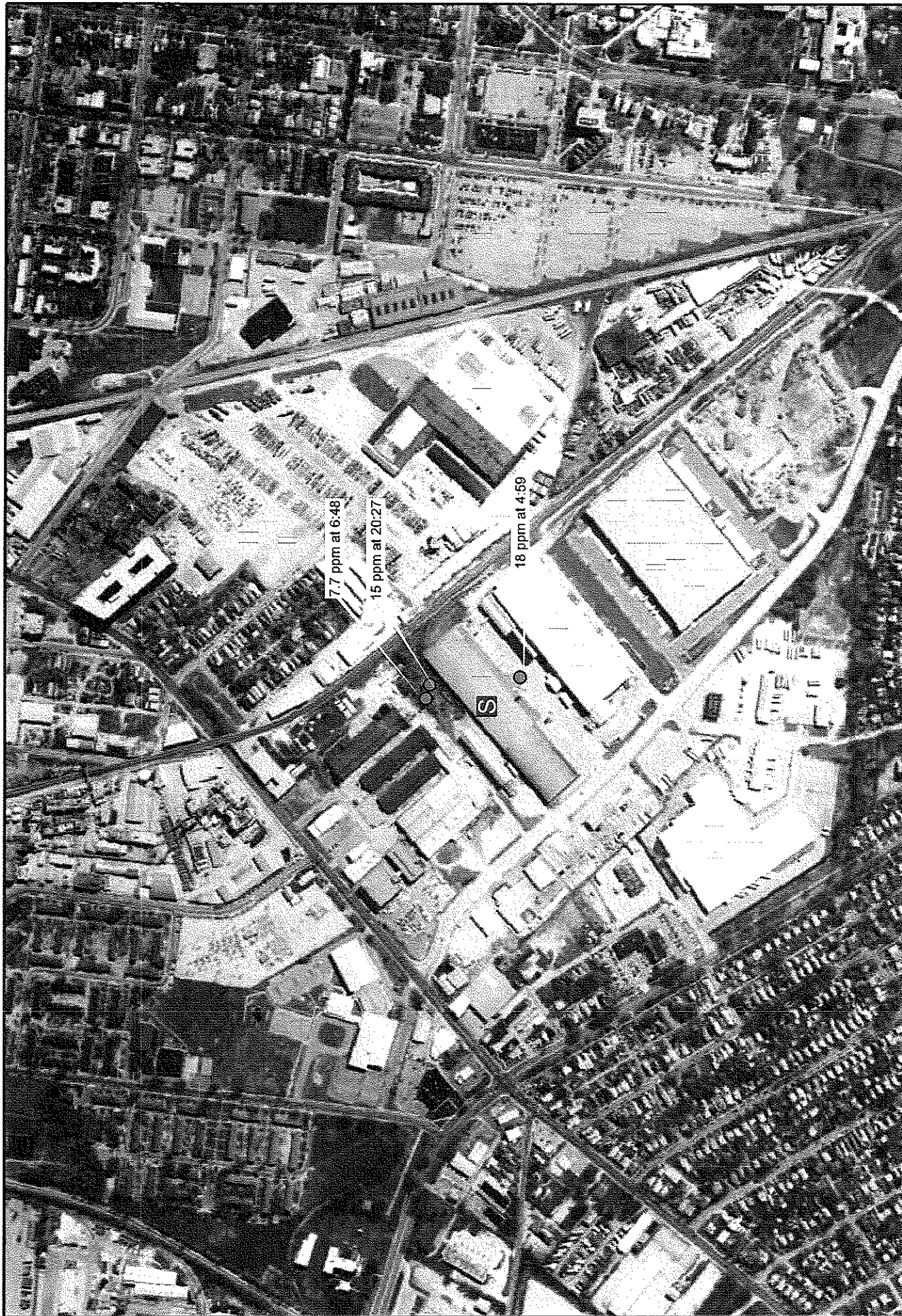
AreaRAE Real Time Readings				Manually Collected Real Time Readings			
Analyte	Average	Maximum	Count	Analyte	Average	Maximum	Count
Ammonia	0.29	7.7	37436	Ammonia	6.8	18	40
LEL	0	0	24934				
O2	20.9	20.9	24934				
Total			87304	Total			40

Total: Includes all readings until last software backup

AreaRAE Real Time Readings				Manually Collected Real Time Readings			
Analyte	Average	Maximum	Count	Analyte	Average	Maximum	Count
Ammonia	0.24	22.2	78638	Ammonia	4.1	18	119
LEL	0	0	56186	Oxygen	20.9	20.9	7
O2	20.9	20.9	56186	LEL	0	0	7
Total			191010	Total			133





Real-Time Air Sampling Summary for 2009-05-18		<div><div><div><div></div><div>N</div></div><div><div><div><div></div><div>Site</div></div><div><div><div></div><div>Sampling Locations</div></div></div></div><div><div><div>0</div><div>0.1</div><div>0.2</div><div>0.4</div></div><div>Miles</div></div></div></div></div>	GTEH	Client: American Cold Storage
			City: Louisville	
			Project #: 4781	
			State: Kentucky	
			Printed 05-19-2009	



Real-Time Air Monitoring
Maximum Detections
for 2009-05-18

Legend

 Site

 Detection



0 0.05 0.1 0.2 Miles

CTEH

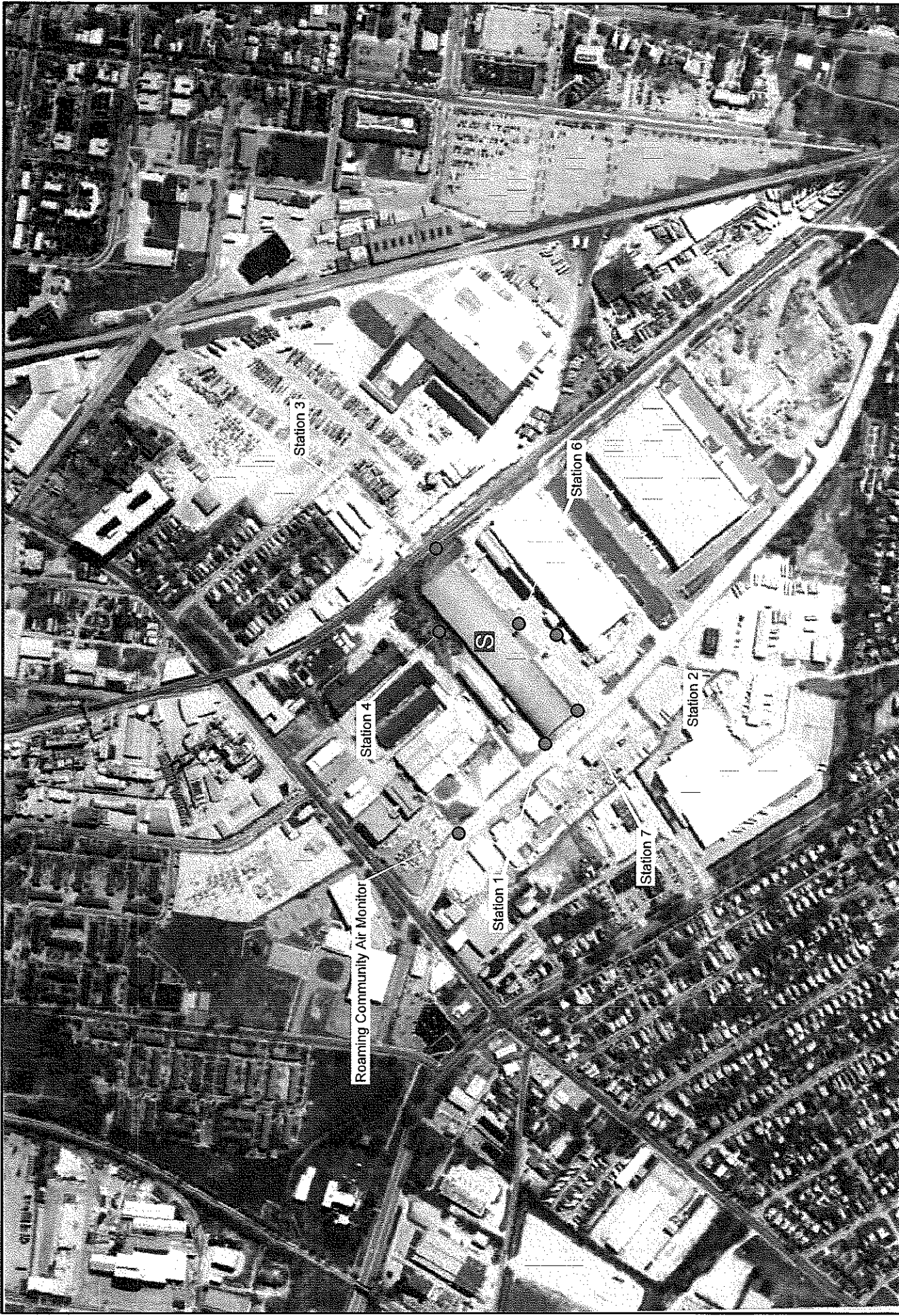
Client: American Cold Storage



City: Louisville

Project #:
4781

State: Kentucky

Printed: 2009-05-19



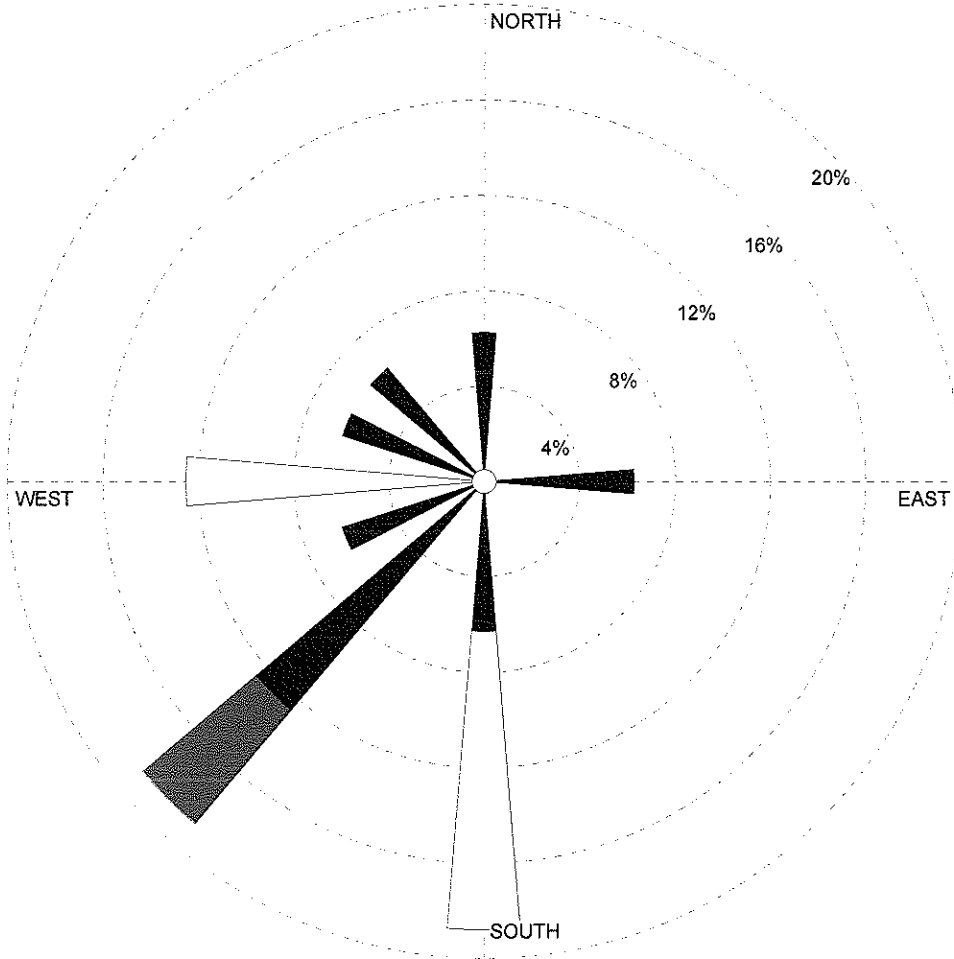
Perimeter Air Monitoring Locations	Legend  Site	 0 0.05 0.1 0.2 Miles		Client: American Cold Storage
			City: Louisville	
			State: Kentucky	
			Project #: 4781 Printed: 2009-05-19	

WIND ROSE PLOT:

**Windrose from MADIS Meteorological Station (I-264 @ Taylor Blvd)
May 18, 2009**

DISPLAY:

**Wind Speed
Direction (blowing from)**



COMMENTS:

DATA PERIOD:

**2009
May 18 - May 18
00:00 - 23:00**

COMPANY NAME:

Center for Toxicology and Environmental Health

MODELER:

CALM WINDS:

18.75%

TOTAL COUNT:

16 hrs.

AVG. WIND SPEED:

2.93 Knots

DATE:

5/19/2009

PROJECT NO.:

4781