July 12, 2019

Summary of Results - Emission Point Modeling Using AERMOD Software

Wheelabrator Hudson Falls
93 River Street
Town of Kingsbury, Washington County, New York

Prepared for:

WHEELABRATOR HUDSON FALLS
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SUMMARY OF RESULTS - EMISSION POINT MODELING USING AERMOD SOFTWARE
WHEELABRATOR HUDSON FALLS SITE
TOWN OF KINGSBURY, WASHINGTON COUNTY, NEW YORK

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1.0 PROJECT OVERVIEW

Wheelabrator Hudson Falls is currently in the process of applying for a renewal of a New York State Department of Environmental Conservation (NYSDEC) Title V Air Permit for the 93 River Street facility located in the Town of Kingsbury, Washington County, New York. As a step in the permitting process, NYSDEC requested that the facility submit a protocol to conduct air dispersion modeling of its operations in order to evaluate the level of impacts associated with emissions from the facility with respect to the National Ambient Air Quality Standard (NAAQS) for Nitrogen Dioxide (NO_2).

Under a previously submitted and approved protocol, the air dispersion modeling was completed in accordance with generally accepted modeling practices, and utilized software which runs the current version of the USEPA AERMOD software as detailed in Section 2. An estimated contaminant-specific (Nitrogen Dioxide) hourly maximum concentration was derived from the model. As part of this project, it is noted that the facility is not undergoing any formal modification. Hourly concentrations were estimated based on an hourly emission rate representing the facility's Potential to Emit, and were evaluated along with the background concentration of nitrogen dioxide to assess compliance with the 1 hour NAAQS.

2.0 SELECTION OF MODELING SOFTWARE

In accordance with NYSDEC Policy DAR-10: NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis, the approved protocol was developed to follow the Division of Air Resources' recommended dispersion modeling procedures for conducting ambient impact analyses. By following these procedures, the protocol also followed the Environmental Protection Agency's (EPA) approved methodologies, as incorporated in Appendix W of 40 CFR Part 51 regulations. In performing such assessments, a set of recommended and acceptable procedures has been defined by EPA and NYSDEC to assist source applicants to assure the proper application of the modeling analysis. As detailed within DAR-10, source analyses at major sources should adhere strictly to the requirements and preferred modeling procedures described in the EPA Guidelines, with the added requirements of NYSDEC on the application of AERMOD.

EPA's Modeling Guideline revisions of November 9, 2005 allowed the substitution of AERMOD for ISC3 during the one year transition period until December 9, 2006, after which AERMOD has been the recommended refined model.

2.1 Description of AERMOD Software

AERMOD is a regulatory steady-state plume modeling system with three separate components: AERMOD (Dispersion Model), AERMAP (Terrain Preprocessor), and AERMET (Meteorological Preprocessor). AERMAP characterizes the terrain, and generates receptor grids for the AERMOD dispersion model, while AERMET provides AERMOD with the meteorological information it needs to characterize the planetary boundary layer.

AERMET uses meteorological data and surface characteristics to calculate boundary layer parameters (e.g. mixing height, friction velocity, etc.) needed by AERMOD. This data is representative of the meteorology in the modeling domain.

AERMAP uses gridded terrain data for the modeling area to calculate a representative terrain-influence height associated with each receptor location. The gridded data is supplied to AERMAP in the format of the Digital Elevation Model (DEM) data from the

United States Geological Survey (USGS). The terrain preprocessor can also be used to compute elevations for both discrete receptors and receptor grids.

In developing AERMOD, AERMIC adopted design criteria to yield a model with desirable regulatory attributes. It was felt that the model should: 1) provide reasonable concentration estimates under a wide variety of conditions with minimal discontinuities; 2) be user friendly and require reasonable input data and computer resources as is the case with the ISCST3 model; 3) capture the essential physical processes while remaining fundamentally simple; and, 4) accommodate modifications with ease as the science evolves.

In order to provide consideration to downwash, cavity impacts, and building wakes and eddies, the software incorporates a feature known as the Building Profile Input Program (BPIP). The BPIP incorporates a program that calculates building heights (BH) and projected building widths (PBW), and is designed to determine whether or not a stack is being subjected to wake effects from a structure or structures, and may lead to different BH and PBW values than those calculated for GEP. These calculations are performed only if a stack is being influenced by structure wake effects.

The current version of AERMOD, version 18081 was used to complete the Air Dispersion Modeling in accordance with the approved protocol.

3.0 SUMMARY OF MODEL INPUTS

3.1 Facility Modeling Parameters

Design data for the facility was used as the basis for running the model in conjunction with the average stack flow and temperature values from 2016-2018 stack testing completed at the facility. This data included emission point parameters (diameter, flow rate, exit velocity, stack height and exit temperature), as well as building footprints and heights. NO_2 emissions for the combustion operations at the facility were estimated based on the potential to emit (i.e., maximum hourly operation) from the municipal waste combustor units. The model was run using specific area settings (i.e., rural setting), based on the layout of the facility and surrounding area. As the stacks are substantially similar and are located adjacent to each other, a merged plume was modeled for the facility.

3.2 Receptor Area

The modeling was conducted for the area in the vicinity of the Wheelabrator Hudson Falls site, with the receptors oriented in a Cartesian grid pattern with a 50 meter spacing between points in the east-west and north-south directions extending to a distance of 5 kilometers from the site. In addition to the 50 meter spaced grid, additional receptors were placed at a 20 meter spacing along the fenceline. All receptor data corresponded to the interpolated ground level elevations (as calculated by AERMAP). For the purposes of the air dispersion modeling, AERMAP was used to assign elevations to the receptor grid points. Online resources were consulted to identify the location of discrete receptors such as schools, hospitals, parks, nursing homes and daycares within the modeling area. The following sensitive receptors are located within the modeling area, and are proximal to receptors.

Receptor	Address	Distance/Location
Schools		
S1 Main Street School	7 Mechanic Street Hudson Falls	0.9 km SE
S2 Greater Glens Falls Christian Academy	1 First Street Hudson Falls	1.3 km NE
S3 Hudson Falls Intermediate School	139 Maple Street Hudson Falls	1.6 km E
S4 Hudson Falls High School	80 East Labarge Street Hudson Falls	1.7 km NE
S5 Hudson Falls Primary School	47 Vaughn Road Hudson Falls	1.7 km NE

Receptor	Address	Distance/Location
S6 Hudson Falls Middle School	131 Notre Dame Street Hudson Falls	2.0 km NE
S7 Hudson Falls Central School District	1153 Burgoyne Avenue Fort Edward	2.5 km SE
Hospitals		
H1 Glens Falls Hospital	100 Park Street Glens Falls	4.3 km W
Parks		
P1 Grace Park	Wall Street Hudson Falls	0.4 km SE
P2 Feeder Canal Park	Canalway Trail Hudson Falls	0.8 km NE
P3 Derby Park Playground	50 Coleman Avenue Hudson Falls	1.7 km SE
P4 Washington Parks & Rec.	383 Broadway Fort Edward	1.8 km S
P5 East Field Park	65 Haskell Avenue Glens Falls	3.1 km NW
P6 Murray Street Park	54 Murray Street Glens Falls	4.5 km SW
P7 Moreau Recreational	Lenox Boulevard Fort Edward	4.9 km SW
P8 Haviland Cove Park	Bush Street Glens Falls	5.0 km SW
Nursing Homes		
NH1 Fort Edward Health System	319 Broadway Fort Edward	2.7 km SE
NH2 Home of Good Shepherd Moreau	198 Bluebird Road South Glens Falls	2.7 km SW
NH3 The Pines at Glens Falls	170 Warren Street Glens Falls	3.5 km NW
Day Care		
DC1 Washington County Head Start	18 River Street Hudson Falls	0.4 km SE
DC2 Margaret Murphy Kindergarten	2 Clark Street Hudson Falls	0.8 km SE
DC3 Little Dumplin's Day Care	23 Union Street Hudson Falls	0.9 km SE
DC4 NYS Registered Day Care	Swan Street Hudson Falls	0.9 km E
DC5 Washington County Head Start	1216 Lower Dix Avenue Hudson Falls	1.8 km NW
DC6 Harrington's Care a Lot	523 Lower Oak Street Hudson Falls	2.0 km SE
DC7 Country Dolls Day Care	358 Dean Road Hudson Falls	4.1 km N
DC8 Itz a Kids World	86 South Street South Glens Falls	4.5 km W
DC9 A Childs World	35 Homer Street Queensbury	5.3 km NW

3.3 AERMAP Data Input

The AERMAP terrain preprocessor utilized USGS 7.5 Minute Native Format DEM topographical data for the Hudson Falls and Glens Falls, New York quadrangles, data which provides a resolution of 10 meters.

3.4 AERMET Data Input

The AERMET meteorological preprocessor utilized surface and upper air data for the years 2014-2018 for the Glens Falls Airport as supplied by the NYSDEC. The Glens Falls location is the closest monitoring location to the site, and was selected in consultation with NYSDEC as the most representative climate data for the facility.

3.5 AERMOD Data Input

Facility-wide Nitrogen Dioxide emissions estimates for on-site activities have been generated based on maximum potential operations at the facility. Stack temperature, velocity and flow rate data were entered into the model as well as the contaminant specific emission rate.

Using the emission point data, the layout of the site buildings and the fenceline for the facility, the model calculated the concentration of the NO_2 from the emissions from the emission points.

The modeling scenario did not consider wet or dry deposition which would deplete mass from the plume, and as such, the modeled result is conservative. The model considers complex terrain through incorporating the AERMAP program into the modeling scenario. USGS topographical data was imported into the modeling software to account for the complex terrain (i.e., those areas where the terrain exceeds the stack base elevation).

Table 1 – Stack Parameters

Emission Point 00001 UTM(km)	4795.685 N, 614.203 E
Emission Point 00002 UTM(km)	4795.682 N, 614.209 E (Merging Stack)
Stack Base Elevation	230 feet
Stack Heights	316 feet each
Stack Diameters	4 feet each
Flow Rates	Unit 1 Average 2017-2018 = 70,128 ACFM Unit 2 Average 2017-2018 = 71,583 ACFM
Exit Velocity	95.0 feet/second (Emission Point 00002)
Exit Temperatures	Unit 1 Average 2017-2018 = 330°F Unit 2 Average 2017-2018 = 313°F
Merged Plume Effective Diameter	5.66 feet
Merged Plume Flow Rate	70,128 + 71,583 = 141,710 ACFM
Merged Plume Temperature	321°F

Table 2 – Modeled Emissions (Based on Maximum Annual Potential For Each Unit)

Hourly NO_X PTE Calculation	Unit 1	Unit 2	Combined Total
Based on 260 ppm NO_X (dry, corrected to 7% O_2) at an hourly design stack flow rate of 28,031 dscf	229.0 tons/yr or 52.28 lb/hr	229.0 tons/yr or 52.28 lb/hr	458.0 tons/yr or 104.57 lb/hr

Mapping of the site area is included as Figure 1, Site Location Map. A Site Plan Map is included as Figure 2.

3.6 Refined Modeling and Regulatory Discussion

3.6.1 Nitrogen Dioxide NAAQS

NO_2 has a 1-hour NAAQS, with the 1-hour NAAQS effective as of April 2010. In accordance with 40 CFR Part 51, Appendix W, due to the complexity of NO_2 modeling, a multi-tiered screening approach is required to obtain hourly and annual average estimates of NO_2. Each tiered approach accounts for increasingly complex considerations of NO_2 chemistry. The tiers of NO_2 modeling include: i. A first-tier (most conservative) ''full'' conversion approach; and ii. A second-tier approach that assumes ambient equilibrium between NO and NO_2.Under the Tier 2 approach, the Tier 1 result will be multiplied by the Ambient Ratio Method 2 (ARM2), which provides estimates of representative equilibrium ratios of NO_2/NO_x value based ambient levels of NO_2 and NO_x derived from national data from the EPA's Air Quality System (AQS).

As part of the analysis, intermittent emissions were not considered in evaluating compliance with the 1-hour standard, consistent with previous EPA memoranda. Intermittent emissions would be 'annualized' and only considered when evaluating compliance with the annual standard, which this model does not. The completed modeling excluded intermittent emissions (i.e., emergency fire pump) from the 1-hour standard.

Hourly NO_2 NAAQS

For evaluation of the 1-hour NAAQS, emissions were "based on emission scenarios that can logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour

concentrations." [reference: 3/1/11 memo, page 9]. For this evaluation, the following emissions were considered:

- Operation of the MWC units fired at maximum load, 8760 hours per year.
- No testing or operation of other (exempt) natural gas fired combustion sources or the emergency fire pump.

4.0 SUMMARY OF MODELING RESULTS

The AERMOD modeling analysis takes into account the operations currently contemplated for the facility, including operation of the facility's MWC units at the maximum permitted capacity. Modeling data included the dimensions and footprints of the facility's buildings, as well as specific information relative to the emission points. The model incorporates topographical data from the USGS, and meteorological data from the Glens Falls Airport.

The results of the modeling software have subsequently been compared to the 1 hour National Ambient Air Quality Standard (NAAQS) for Nitrogen Dioxide (NO_2) as issued by the United States Environmental Protection Agency (USEPA).

A summary of the modeled maximum hourly concentration and a comparison of that value to the established NAAQS value including background Nitrogen Dioxide are presented within this summary report.

The background level of Nitrogen Dioxide was obtained through the NYSDEC website based on the most recently published New York State Ambient Air Quality Report (currently 2018). Data published by NYSDEC specific to Nitrogen Dioxide was used for the Buffalo, New York monitoring location in NYSDEC Region 9. The background concentration at this location is 49.20 ppb NO_2 (1-hour average of 98th percentile for the last 3 years). This corresponds to a background concentration of NO_2 of 92.496 ug/m^3.

The model output had a maximum concentration of NO_2 (one hour average of 98th percentile or 8th highest 1 hour value) of 12.043 ug/m^3. The total concentration of NO_2 (i.e., the sum of the model result and the background level) is 104.539 ug/m^3 based on 92.496 ug/m^3 (from background) + 12.043 ug/m^3 (from facility) =104.539 ug/m^3 or ±55.6 percent of the 100 ppb (188 ug/m^3) 1 hour NO_2 standard.

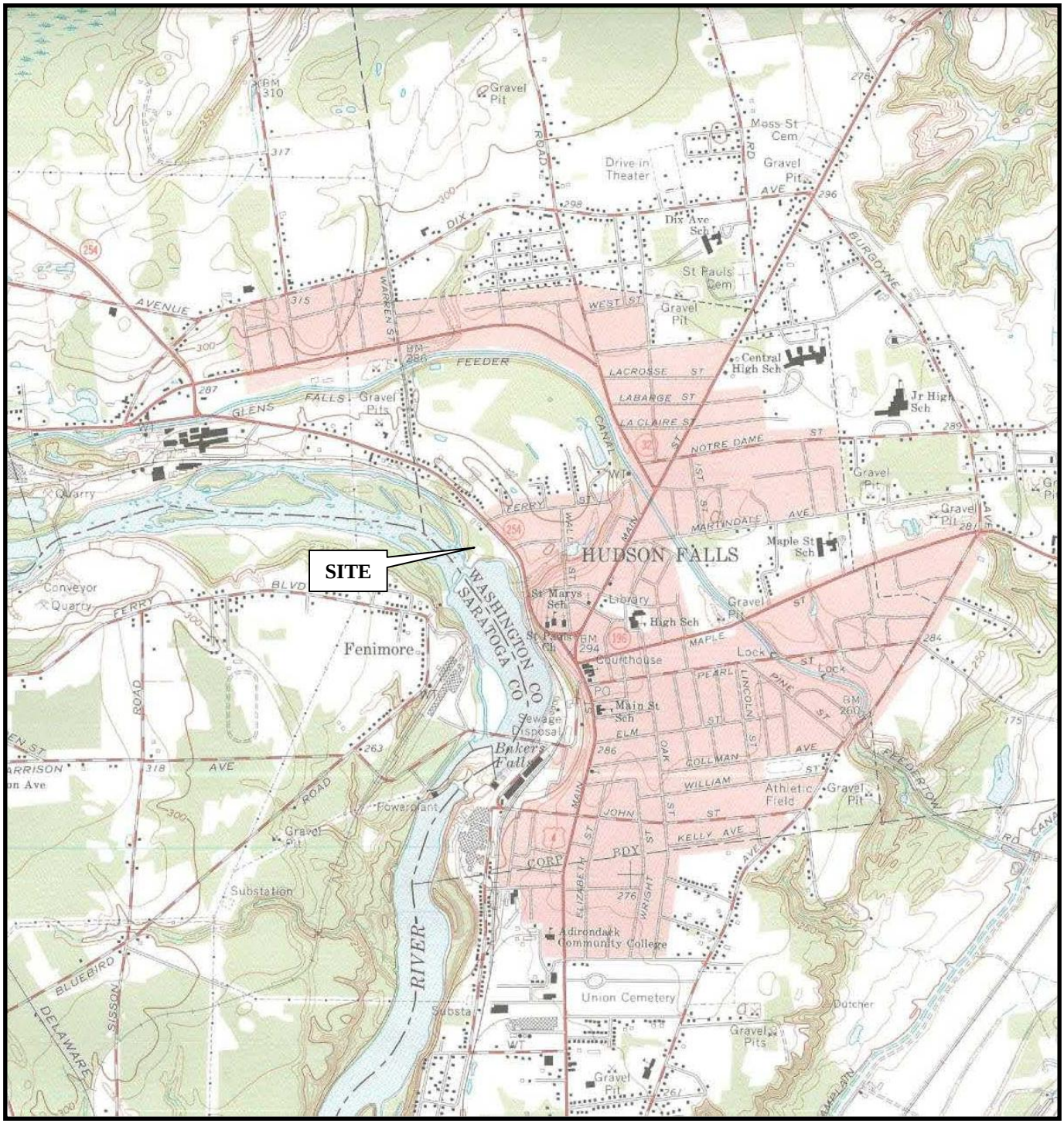
4.1 Location of Maximum Concentration Receptor

The location of the receptor for the maximum concentration of Nitrogen Dioxide is at 614003.00, 4796385.68, located ±590 meters northwest of the modeled stack. An isopleth indicating the results of the modeling demonstrating the concentrations of Nitrogen Dioxide throughout the receptor grid area is included as Figure 3. Mapping of the

model output for the entire receptor grid, including the sensitive receptors is included as Figure 4.

As shown on these figures, the sensitive receptors are each located in areas where the combined facility and background concentration would not exceed ±56% of the 1-hour NAAQS for Nitrogen Dioxide.

FIGURES



MAP REFERENCE

United States Geological Survey
7.5 Minute Series Topographic Map
Quadrangle: Hudson Falls, NY
Date: 1966

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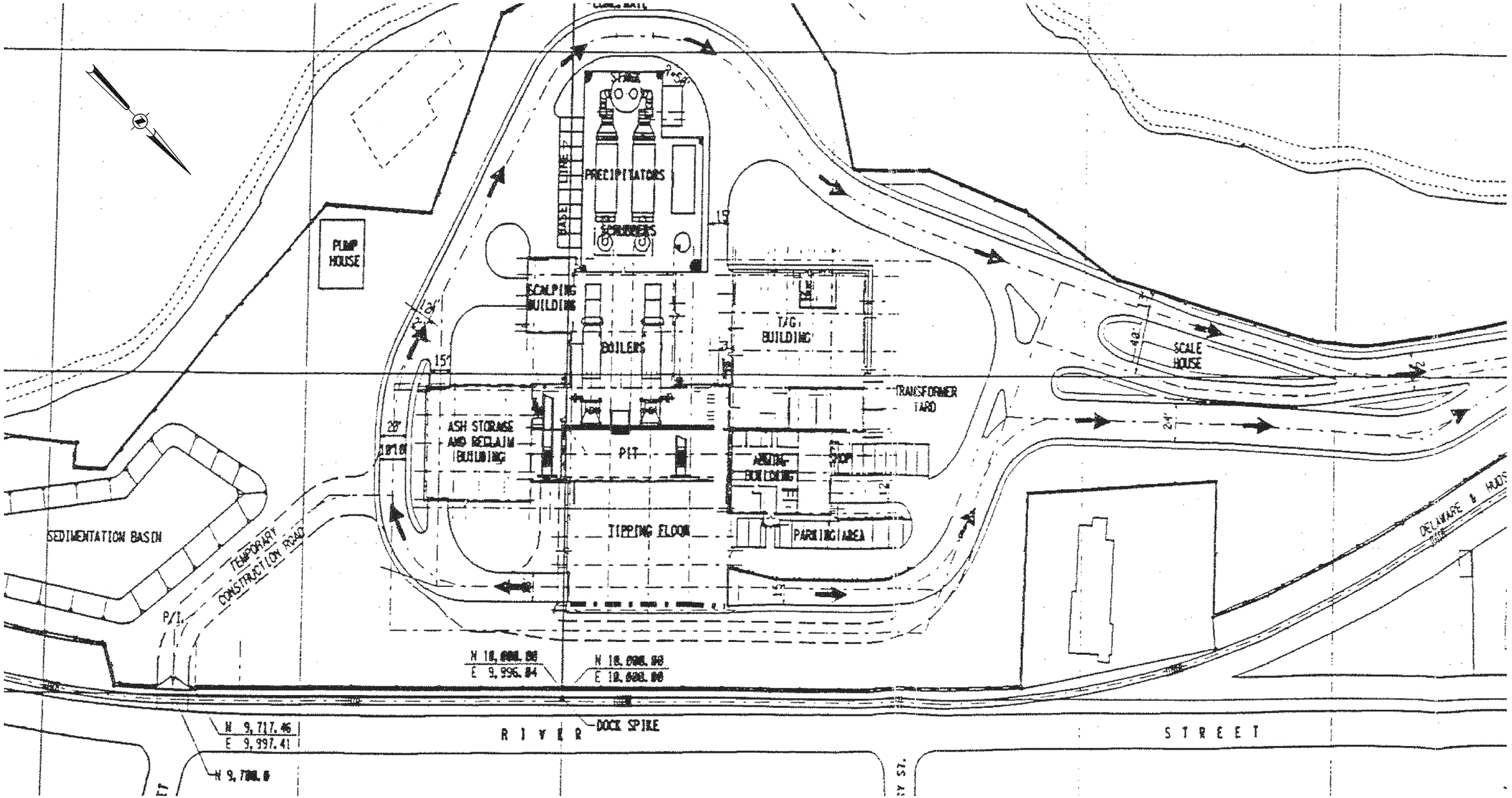
FIGURE 1-SITE LOCATION MAP

WHEELABRATOR HUDSON FALLS, LLC.

VILLAGE OF HUDSON FALLS	WASHINGTON COUNTY, NY
SCALE: NOT SHOWN	
DRAFTER: JEY	
PROJECT No. 13.3648	



NOTE:
1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

MAP REFERENCE:
1. BASE MAP PROVIDED BY CLIENT.

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTED	CHECK	APPR.
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				

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DESIGNED :
DRAFTED : J.MARX
CHECKED : J.FARRON
PROJ. NO: 05.5437
SCALE : NOT TO SCALE
DATE : OCT. 2005

FIGURE 2
SITE PLAN MAP

WHEELABRATOR HUDSON FALLS, LLC

VILLAGE OF HUDSON FALLS — WASHINGTON COUNTY, NY

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
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ARCHITECTURE & BUILDING SYSTEMS ENGINEERING * CIVIL ENGINEERING
ENVIRONMENTAL SERVICES * SURVEY & LAND INFORMATION SERVICES

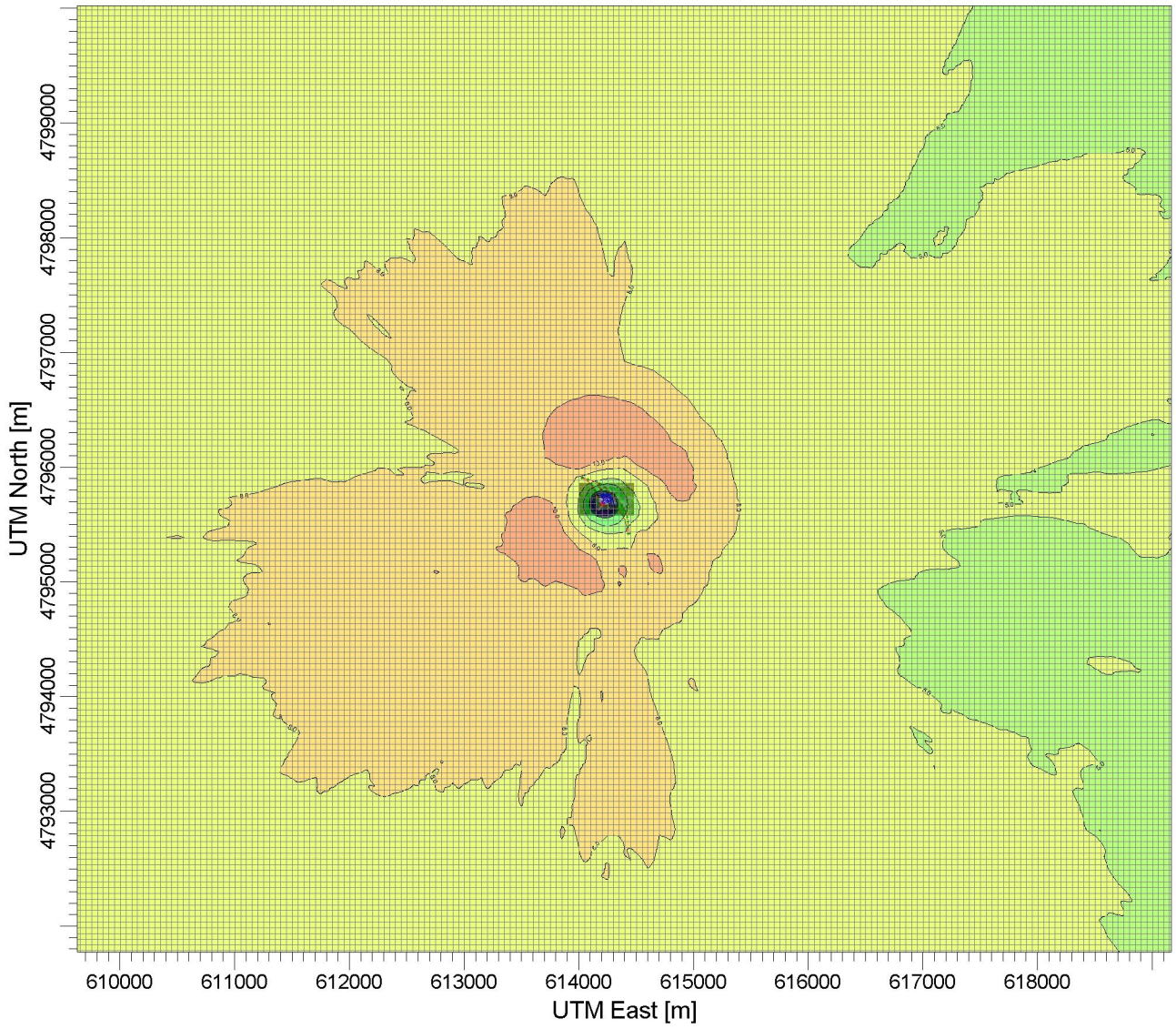
SHEET 1 OF 1
DWG. NO:

CAD DWG. FILE NAME: FIG 2. DWG

CAD DWG. FILE NAME:FIG 2. DWG

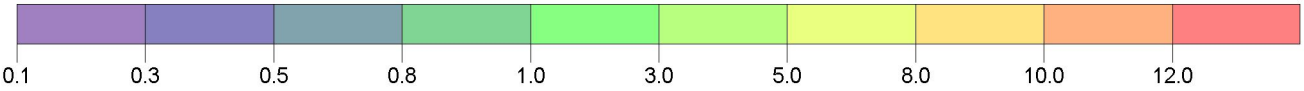
PROJECT TITLE:

Air Dispersion Modeling - Nitrogen Dioxide
Wheelabrator Hudson Falls - Based on 260 ppm NOX



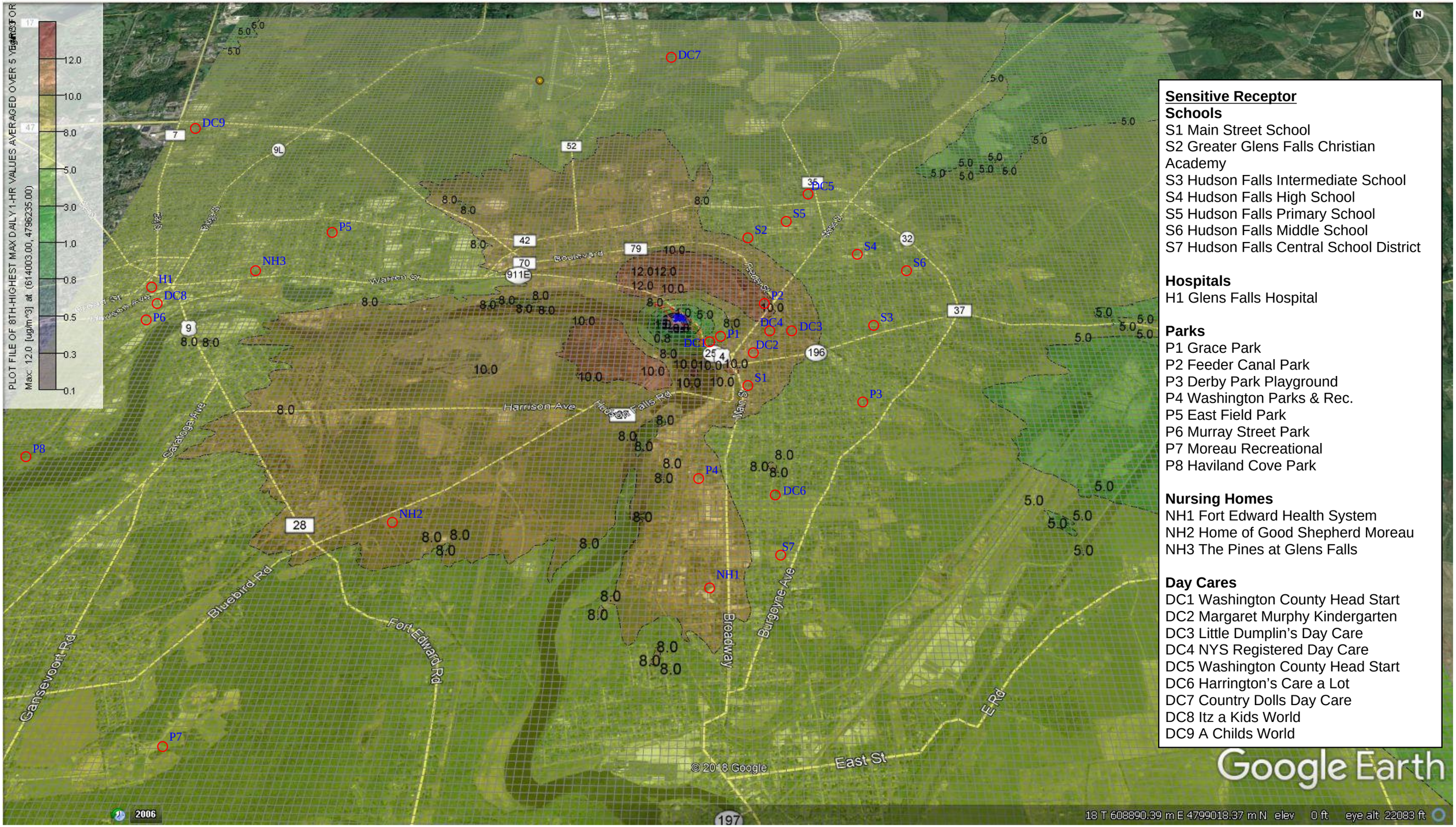
PLOT FILE OF 8TH-HIGHEST MAX DAILY 1-HR VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 12.0 [ug/m^3] at (614003.00, 4796235.00)



COMMENTS: Facility Contribution from combined emission point based on 260 ppm NOx.	SOURCES: **1**	COMPANY NAME: **C.T. Male Associates**	
	RECEPTORS: **40443**	MODELER: **J.Farron**	
	OUTPUT TYPE: **Concentration**	SCALE: 1:60,000 0 2 km	
	MAX: **12.0 ug/m^3**	DATE: **7/12/2019**	PROJECT NO.: **19.9051**

Map of Model Output and Sensitive Receptor Locations



Sensitive Receptor

Schools
S1 Main Street School
S2 Greater Glens Falls Christian Academy
S3 Hudson Falls Intermediate School
S4 Hudson Falls High School
S5 Hudson Falls Primary School
S6 Hudson Falls Middle School
S7 Hudson Falls Central School District

Hospitals
H1 Glens Falls Hospital

Parks
P1 Grace Park
P2 Feeder Canal Park
P3 Derby Park Playground
P4 Washington Parks & Rec.
P5 East Field Park
P6 Murray Street Park
P7 Moreau Recreational
P8 Haviland Cove Park

Nursing Homes
NH1 Fort Edward Health System
NH2 Home of Good Shepherd Moreau
NH3 The Pines at Glens Falls

Day Cares
DC1 Washington County Head Start
DC2 Margaret Murphy Kindergarten
DC3 Little Dumplin's Day Care
DC4 NYS Registered Day Care
DC5 Washington County Head Start
DC6 Harrington's Care a Lot
DC7 Country Dolls Day Care
DC8 Itz a Kids World
DC9 A Childs World

ATTACHMENT A

Air Dispersion Modeling Setup and Output Files

Control Pathway

Dispersion Options

Titles

Air Dispersion Modeling - Wheelabrator Hudson Falls, NY Site

Dispersion Options

☐ Regulatory Default ☒ Non-Default Options

☒ Elevated Terrain
☐ No Stack-Tip Downwash (NOSTD)
☐ Run in Screening Mode
☐ Conversion of NOx to NO2 (OLM or PVMRM)
☐ No Checks for Non-Sequential Met Data
☐ Fast All Sources (FASTALL)
☐ Fast Area Sources (FASTAREA)
☐ Optimized Area Source Plume Depletion
☐ Gas Deposition

BETA Options:

☐ Capped and Horizontal Stack Releases
☒ Adjusted Friction Velocity (u*) in AERMET (ADJ_U*)
☐ Low Wind Options

☐ SCIM (Sampled Chronological Input Model)
☐ Ignore Urban Night / Daytime Transition (NOURBTRAN)

Dispersion Coefficient

Rural

Output Type

☒ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

NO2

Averaging Time Options

Hours ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☐ Period ☐ Annual

☒ 1-Hour NO2 Non-NAAQS
☒ 1-Hour NO2 NAAQS

Exponential Decay

☐ Yes ☒ No

Terrain Height Options

☐ Flat ☒ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☐ Yes ☒ No

Default Height = 0.00 m

Building Downwash Information

Source ID: STCK2

Heights [m] (10 to 360 deg)						
10-60 deg	39.01	39.01	39.01	39.01	31.09	39.01
70-120 deg	39.01	39.01	39.01	17.68	17.68	17.68
130-180 deg	17.68	17.68	17.68	17.68	39.01	39.01
190-240 deg	39.01	39.01	39.01	39.01	31.09	39.01
250-300 deg	39.01	39.01	39.01	17.68	17.68	17.68
310-360 deg	17.68	17.68	17.68	17.68	39.01	39.01
Widths [m] (10 to 360 deg)						
10-60 deg	34.29	33.95	31.83	28.75	49.18	28.28
70-120 deg	30.80	32.38	32.97	28.60	29.56	29.63
130-180 deg	28.80	27.70	28.44	29.47	34.02	34.29
190-240 deg	34.29	33.95	31.83	28.75	49.18	28.28
250-300 deg	30.80	32.38	32.97	28.60	29.56	29.63
310-360 deg	28.80	27.70	28.44	29.47	34.02	34.29
Lengths [m] (10 to 360 deg)						
10-60 deg	32.56	31.17	28.82	25.60	22.50	28.89
70-120 deg	31.94	34.02	35.06	27.20	24.73	21.52
130-180 deg	17.64	13.24	16.72	20.73	32.38	32.97
190-240 deg	32.56	31.17	28.82	25.60	22.50	28.89
250-300 deg	31.94	34.02	35.06	27.20	24.73	21.52
310-360 deg	17.64	13.24	16.72	20.73	32.38	32.97
Along Flow [m] (10 to 360 deg)						
10-60 deg	19.95	23.86	27.05	29.42	51.78	25.90
70-120 deg	21.40	16.25	10.60	-6.11	-7.74	-9.13
130-180 deg	-10.24	-11.04	-15.35	-19.86	-42.82	-48.40
190-240 deg	-52.51	-55.03	-55.88	-55.02	-74.28	-54.79
250-300 deg	-53.34	-50.26	-45.66	-21.09	-17.00	-12.39
310-360 deg	-7.40	-2.19	-1.37	-0.87	10.44	15.43
Across Flow [m] (10 to 360 deg)						
10-60 deg	-22.15	-15.50	-8.38	-1.00	8.23	13.81
70-120 deg	20.53	26.63	31.92	15.03	16.03	16.53
130-180 deg	16.54	16.35	15.90	14.39	33.25	28.13
190-240 deg	22.15	15.50	8.38	1.00	-8.23	-13.81
250-300 deg	-20.53	-26.63	-31.92	-15.03	-16.03	-16.53
310-360 deg	-16.54	-16.35	-15.90	-14.39	-33.25	-28.13

Source Pathway

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: C:\Users\JoeF\Desktop\DEC Met Data\GFL1418.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: C:\Users\JoeF\Desktop\DEC Met Data\GFL1418.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 100.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2014			
Upper Air		2014			

Data Period

Data Period to Process

Start Date: 1/1/2014 Start Hour: 1 End Date: 12/31/2018 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	■	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: WH041901.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
1	ALL	8th	01H8GALL.PLT

Output File of US NAAQS

Path for US NAAQS: WH041901.AD

NAAQS Auto-Generated Maximum Daily Files (MAXDAILY)

Active	Source Group ID	File Name
Yes	ALL	MAXDAILY_ALL_NO2.DAT

NAAQS Auto-Generated Maximum Daily By Year Files (MXDYBYYR)

Active	Source Group ID	File Name
Yes	ALL	MXDYBYYR_ALL_NO2.DAT

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	609203.00	4790685.00	201	201	50.00	50.00

Discrete Receptors

Plant Boundary Receptors

Receptor Pathway

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	614032.53	4795911.67	FENCEPRI	67.03	
2	614077.80	4795889.04	FENCEPRI	70.32	
3	614081.48	4795893.32	FENCEPRI	70.56	
4	614152.44	4795869.46	FENCEPRI	71.51	
5	614185.48	4795854.17	FENCEPRI	71.97	
6	614163.45	4795835.20	FENCEPRI	70.96	
7	614194.04	4795802.17	FENCEPRI	71.13	
8	614230.14	4795826.64	FENCEPRI	72.41	
9	614294.99	4795754.45	FENCEPRI	72.26	
10	614339.65	4795706.12	FENCEPRI	71.92	
11	614375.13	4795670.63	FENCEPRI	71.68	
12	614370.85	4795662.68	FENCEPRI	71.32	
13	614391.65	4795633.32	FENCEPRI	71.15	
14	614396.54	4795638.21	FENCEPRI	71.43	
15	614409.39	4795615.57	FENCEPRI	71.41	
16	614422.23	4795563.57	FENCEPRI	70.69	
17	614428.96	4795523.20	FENCEPRI	69.49	
18	614433.86	4795484.65	FENCEPRI	72.46	
19	614444.26	4795424.70	FENCEPRI	72.48	
20	614429.58	4795417.97	FENCEPRI	65.50	
21	614416.73	4795484.65	FENCEPRI	69.10	
22	614403.88	4795536.04	FENCEPRI	67.39	
23	614381.86	4795588.66	FENCEPRI	68.96	
24	614376.35	4795586.21	FENCEPRI	67.54	
25	614346.37	4795629.65	FENCEPRI	66.28	
26	614348.82	4795633.93	FENCEPRI	68.46	
27	614342.09	4795643.72	FENCEPRI	70.12	
28	614302.94	4795645.55	FENCEPRI	67.57	
29	614265.62	4795649.22	FENCEPRI	68.91	
30	614252.77	4795668.80	FENCEPRI	70.40	
31	614212.40	4795652.89	FENCEPRI	69.02	
32	614184.25	4795666.96	FENCEPRI	68.79	
33	614165.90	4795679.81	FENCEPRI	66.06	
34	614158.56	4795699.39	FENCEPRI	65.60	
35	614159.78	4795719.58	FENCEPRI	66.07	
36	614169.57	4795733.65	FENCEPRI	69.63	
37	614156.11	4795749.55	FENCEPRI	65.93	
38	614145.10	4795772.80	FENCEPRI	65.15	
39	614143.26	4795792.99	FENCEPRI	65.65	

40	614115.74	4795841.32	FENCEPRI	67.22	
41	614105.95	4795855.39	FENCEPRI	68.23	
42	614027.64	4795907.39	FENCEPRI	63.83	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	UCART1	Receptors generated from Uniform Cartesian Grid
3	FENCEINT	Cartesian plant boundary Intermediate Receptors

Results Summary

Air Dispersion Modeling - Wheelabrator Hudson Falls, NY Site

NO2 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	20.48611	ug/m^3	612753.00	4795435.00	91.79	0.00	91.79	
1-HR	8TH	12.04319	ug/m^3	614003.00	4796235.00	76.12	0.00	76.12	

Source Pathway - Source Inputs

Point Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Gas Exit Temp. [K]	Gas Exit Velocity [m/s]	Stack Inside Diameter [m]
POINT	STCK2	614209.00 U00002-Merged Stack	4795682.00	70.53	96.32	13.17560	433.98	28.69	1.72