Project to Implement a Processing Plant for Spent Pot Lining in Jonquière

Comprehensive Study Report

Annexes

(document prepared by Tecsult Inc.)

JANUARY 2006

TABLE OF CONTENT

LIST OF APPENDICE

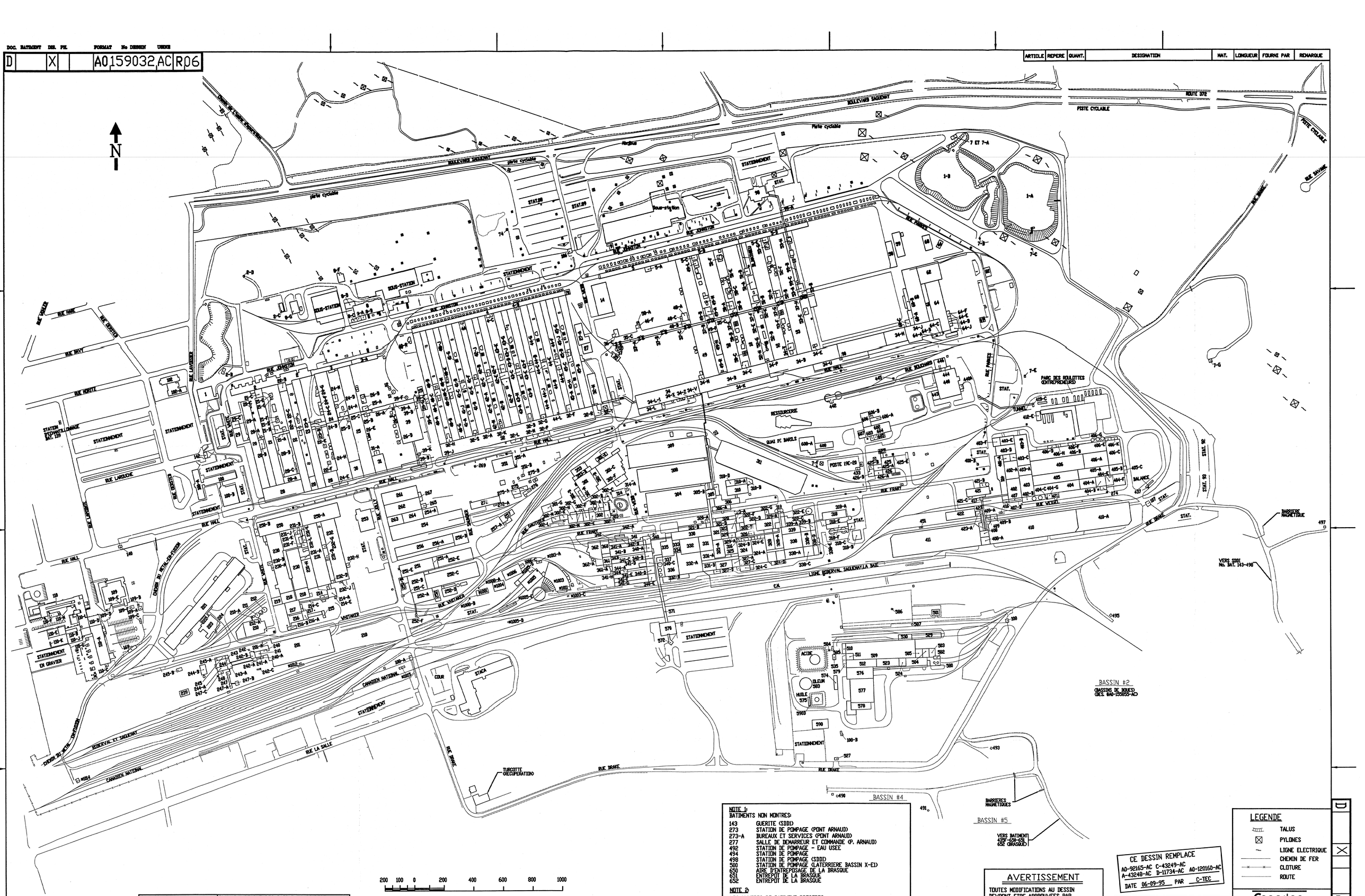
Appendix A	Jonquière Complex Drawing
Appendix B	General Plan
Appendix C	Material Safety Data Sheets
Appendix D	Letter from the MENV – Ambient Air Criteria
Appendix E	Data and results from Atmospheric Emission Modellings
	Appendix E-1 Topographic Table
	Appendix E-2 Building Data
	Appendix E 3 Emission Data
	Appendix E-4 Results - Particulates
	Appendix E-5 Results – NH NH3
	Appendix E-6 Wind Rose
Appendix F	Drawings of Atmospheric Emission Sources - Plan View and Elevation Drawing

APPENDIX A

Jonquière Complex Drawing

DOC.	BATIMENT	DES.	PE.	FORMAT	No DESSIN	USINE
D		X		A0	159032	AC

ARTICLE	REPERE	QUANT.	DESIGNATION	MAT.	LONGUEUR	FOURNI PAR	REMARQUE



200 100 0 200 400 600 800 1000

- ECHELLE EN PIEDS -

NOTE 1:
BATIMENTS NON MONTRES:

143	GUERITE (SDDI)
273	STATION DE POMPAGE (PONT ARNAUD)
273-A	BUREAUX ET SERVICES (PONT ARNAUD)
277	SALLE DE DEMARREUR ET COMMANDE (P. ARNAUD)
492	STATION DE POMPAGE - EAU USEE
494	STATION DE POMPAGE
498	STATION DE POMPAGE (SDDI)
500	STATION DE POMPAGE (LATERRIERE BASSIN X-E1)
650	AIRE D'ENTREPOSAGE DE LA BRASQUE
651	ENTREPOT DE LA BRASQUE
652	ENTREPOT DE LA BRASQUE

NOTE 2:
LES NUMEROS DE BATIMENT PRECEDES D'UN ASTERISQUE SONT PROPRIETES DE ROBERVAL-SAGUENAY.

LEGENDE

- TALUS
- PYLONES
- LIGNE ELECTRIQUE
- CHEMIN DE FER
- CLOTURE
- ROUTE

CE DESSIN REMPLACE
A0-92165-AC C-43249-AC
A-43248-AC D-11734-AC A0-120160-AC
DATE 06-09-95 PAR C-TEC

SOURCE LA CARTOGRAPHIE NUMERIQUE EST BASEE SUR LES PHOTOS AERIENNES DE MAI 1994 ET PREPAREE PAR LA SOCIETE GEOCARTO-NUMERIQUE C T INC.

Cegertec INC.
PROJET No 7875-02 DESSIN No. A0159032

AVERTISSEMENT

TOUTES MODIFICATIONS AU DESSIN DEVRONT ETRE APPROUVEES PAR UN RESPONSABLE DE LA SALLE A DESSIN DE L'INGENIERIE.

F-18083-AC	PLAN D'ENSEMBLE DES BATIMENTS ET RESEAU FERROVIAIRE (ECHELLE: 1" = 100')		
X-7508-EE	RESEAU ELECTRIQUE, PYLONES, POTEAUX, POSTES,		
A0-130000-AC	RESEAU DU CONDENSAT ET DE LA VAPEUR	06	98-10-29
F-19700-AC	RESEAU D'AIR COMPRIME(A0-144000-AC)	05	98-09-01
F-21700-AC	RESEAU D'EGOUT ET REGARDS		
F-24100-AC	RESEAU D'AQUEDUC	04	97-06-20
A-47387-AC	CABLES TELEPHONIQUES ENFOUIS	03	97-04-17
A0-121601-AC	CARTES DES AIRES DE STATIONNEMENT		
F-71100-AC	SONDAGES GEOTECHNIQUES	02	96-04-09
F-25701-AC	RESERVOIRS DES CARBURANTS	01	95-11-23
A0-112767-AC	GAZ NATUREL	00	

EMIS	REV.	DATE	STADE & DISTRIBUTION	VISE

REGISTRE D'EMISSION

NO. DESSINS	TITRE CONCIS

DESSINS DE REFERENCE

NO.	DATE	DESCRIPTION	COORDONNEES	PROJET	PAR	APP.	APPR. INGEN. (NOM)	No OIQ
06	98-10-29	AJOUTE LA RESSOURCERIE			M. L.	G.T.		
05	98-09-01	DEMOLITION PHASE III , 97.			M.G.I.	G.T.		
		BAT. 46,47,48,ET CONNEXES ENLEVEES						
04	97-06-20	AJOUT BAT. #440A			GCS	D.A.		
03	97-04-17	DEMOLITION PHASE II '96 (LMB)						
		BATIMENTS ENLEVES			LMB	P.M.	M. DESCHENES	
02	96-04-09	COORDONNEES GEODESIQUES			D.G.	F.R.	G. GILBERT	
01	95-11-23	NUMEROS BAT. ET ECHELLE			Y.P.	F.R.	G. GILBERT	
00		CONCEPTION INITIALE						

REVISION

NO.	DATE	DESCRIPTION	COORDONNEES	PROJET	PAR	APP.	APPR. INGEN. (NOM)	No OIQ

REVISION

INGENIERIE

SCEAU

APPROBATION ADMINISTRATIVE

NOM DATE

NOM DATE

D. ALLAIRE SEPT.95
ACCEPTATION ARRANGEMENT DATE

MICHEL TREMBLAY SEPT.95
DESSINE DATE

F. RIVARD NOV.95
VERIFIE DATE

NOV.95
APPROBATION DATE

462109L
PROJET, INC. AUT.

1"=200'
ECHELLE

SECAL COMPLEXE JONQUIERE

PLAN D'ENSEMBLE DES BATIMENTS

ECHELLE 1" = 200'-0"

DAO-REVISION SEPT. 1995

Société d'électrolyse et de chimie Alcan Ltée

ALCAN

Complexe Jonquière
1955 Mellon, C.P. 1500
Jonquière, Québec
G7S 4L2

D X A0159032AC R06

Correspondence Table

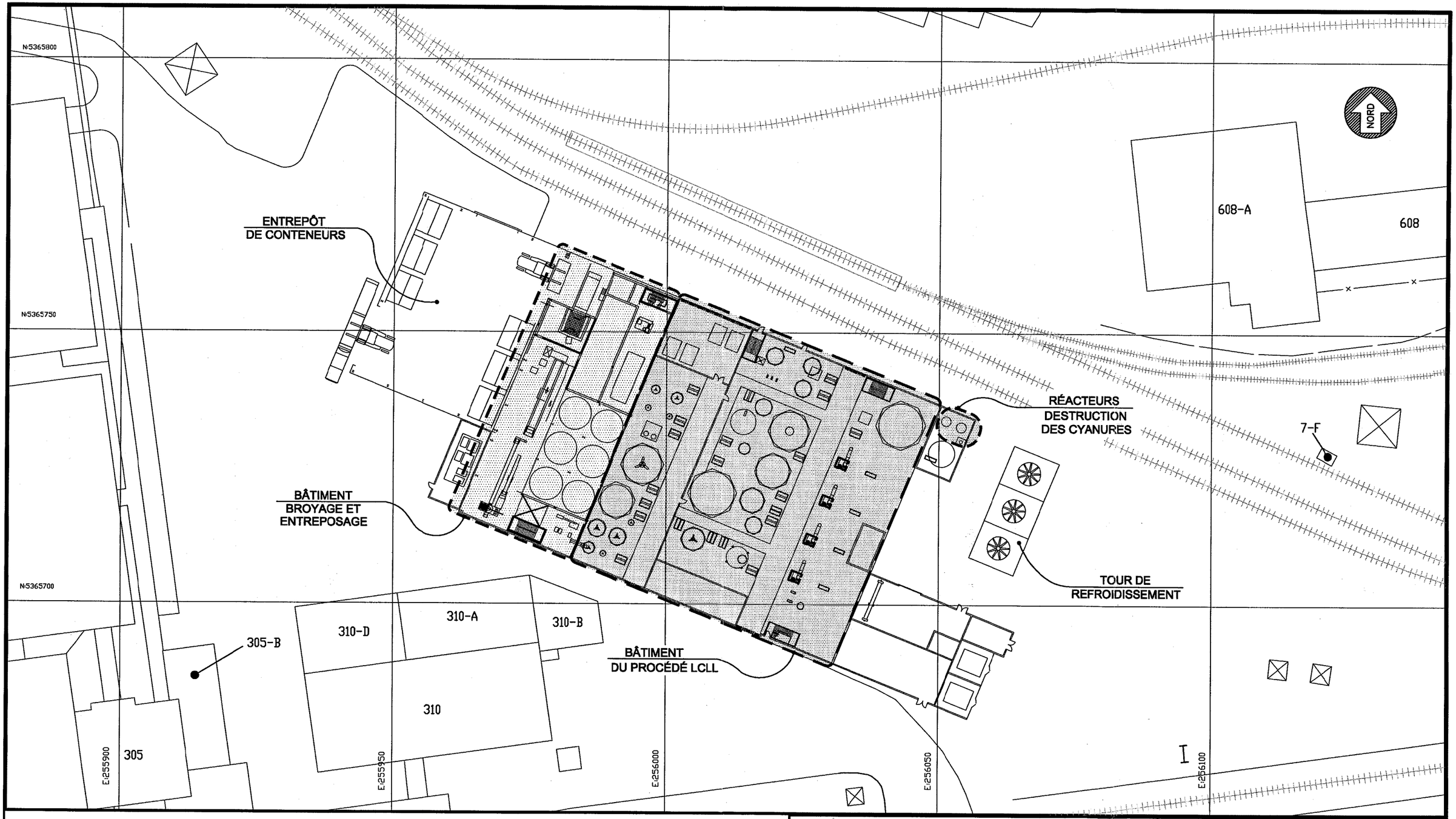
PLAN D'ENSEMBLE DES BATIMENTS ET RESEAU	General Plan of the Buildings and Network
FERROVIAIRE <ECHELLE 1' = 100'>	Railroad (Scale 1" = 100')
RESEAU ELECTRIQUE, PYLONES, POTEAUX, POSTES	Power System, Pylons, Poles, Stations
RESEAU DU CONDENSAT ET DE LA VAPEUR	Condensate and Steam Network
RESEAU D'AIR COMPRIME <AO-144000-AC>	Compressed Air Network
RESEAU D'EGOUT ET REGARDS	Wastewater system and Starring Array
RESEAU D'AQUEDUC	Water Supply System
CABLES TELEPHONIQUES ENFOUIS	Underground Telephone Cable
CARTES DES AIRES DE STATIONNEMENT	Parking Map
SONDAGES GEOTECHNIQUES	Geothechnical Boring
RESERVOIRS ET CARBURANTS	Fuel Tanks
GAZ NATUREL	Natural Gas
TITRE CONCIS	Concise Title
DESSINS DE REFERENCE	Reference Drawing
REGISTRE D'EMISSION	Emission Registry
NO. DESSIN	Drawing #
STAGE & DISTRIBUTION	Stage & Distribution
Date	Date
REV.	Rev.
EMIS	Emis
AJOUTE LA RESSOURCERIE	Add resources
DEMOLITION PHASE III , 97.	Demolition Phase III , 97.
BAT. 46, 47, 48,ET CONNEXES ENLEVEES	Buil. 46, 47, 48, and related deleted
AJOUT BAT. #440A	Add buil. #440A
DEMOLITION PHASE II 96 (LMB)	Demolition Phase II 96 (LMB)
BATIMENTS ENLEVES	Building Removed
COORDONNEES GEODESIQUES	Geodetic Coordinate
COORDONNEES	Coordinates
PROJET	Project
PAR	By
APP.	App.
APPR. INGEN. NOM	Appr. Engin. Name
NO. DIQ	DIQ #
NO.	#
DATE	Date

NUMEROS BAT. ET ECHELLE	Build. Numbers and Scale
CONCEPTION INITIALE	Initial Design
DESCRIPTION	Description
NOTE 1	Note 1
BATIMENTS NON MONTRES	Buildings Not Shown
GUERITE	Workman's hut
STATION DE POMPAGE (PONT ARNAUD)	Pumping Station (Arnaud Bridge)
BUREAUX ET SERVICES (PONT ARNAUD)	Offices and Services (Arnaud Bridge)
SALLE DE DEMARREUR ET COMMANDE (P. ARNAUD)	Starter and Command Room (Arnaud Bridge)
STATION DE POMPAGE – EAU USEE	Pumping Station – Wastewater
STATION DE POMPAGE	Pumping Station
STATION DE POMPAGE (SDDI)	Pumping Station (SDDI)
STATION DE POMPAGE (LATERRIERE BASSIN X-E1)	Pumping Station (Latterière Bassin X-E1)
AIRE D'ENTREPOSAGE DE LA BRASQUE	Pot Lining Storage Site
ENTREPOT DE LA BRASQUE	Pot Lining Warehouse
ENTREPOT DE LA BRASQUE	Pot Lining Warehouse
NOTE 2	Note 2
LES NUMEROS DE BATIMENT PRECEDES D'UN ASTERISQUE SONT PROPRIETES DE ROBERVAL-SAGUENAY	Building numbers preceded by an asterisk are the property of Roberval- Saguenay
DESCRIPTION	Description
COORDONNEES	Coordinates
PROJET	Project
PAR	By
APP.	Appr.
APPR. INGEN. <NOM>	Eng. Appr. (Name)
NO. DIQ	DIQ #
REVISION	Revision
AVERTISSEMENT TOUTES MODIFICATIONS AU DESSIN DEVRONT ETRE APPROUVEES PAR UN RESPONSABLE DE LA SALLE A DESSIN DE L'INGENIERIE	WARNING All changes made to the drawing will have to be approved by the officer in charge of drafting room of the engineering
CE DESSIN REMPLACE DATE PAR	This drawing replaces Date By

LEGENDE TALUS PYLONE LIGNE ELECTRIQUE CHEMIN DE FER CLOTURE ROUTE	Legend: Bank Pylons Power lines Railroad Fence Road
SOURCE: LA CARTOGRAPHIE NUMERIQUE EST BASEE SUR LES PHOTOS AERIENNES DE MAI 1994 ET PREPAREE PAR LA SOCIETE GEOCARTO-NUMERIQUE CT INC.	Source: Digital mapping is based on aerial photos taken in May 1994 and prepared by Société Géocarto-numérique C T Inc.
CERGETEC	Cergetec
INGENIERIE	Engineering
SECAL COMPLEXE JONQUIERE PLAN D'ENSEMBLE DES BATIMENTS ECHELLE 1' – 200" 0' DAO – REVISION SEPT. 1995	SECAL Jonquière Complex General Plan of the Buildings Scale 1' – 200" 0' DAO-Revision Sept. '95
SCEAU	Seal
Sept '95 ACCEPTATION ARRANGEMENT DATE Sept '95 DESSINE Nov. '95 VERIFIE Nov. '95 APPROBATION	Sept '95 Arrangement Approval date Drawing Sept '95 Drawing Nov. '95 Verified Nov. '95 Approval
APPROBATION ADMINISTRATIVE Nom Date Nom Date	Adminsitrative Approval Name Date Name Date
PROJET, DNC, AUT.	Project, DNC, Auth.
1'–200" EHCELLE	1'–200" Scale
SOCIETE D'ELECTROLYSE ET DE CHIMIE ALCAN Ltée	Alcan Smelters and Chemicals Limited
Complexe Jonquière 1955 Mellon C.P. 1500 Jonquière, Quebec G7S 4L2	Jonquière Complex 1955 Mellon PO Box 1500 Jonquière, Quebec G7S 4L2

APPENDIX B

General Plan



0 10 50m

ÉCHELLE GRAPHIQUE

Ref.: Bechtel Québec Ltée., dessin 100-C-110

USINE DE TRAITEMENT DE LA BRASQUE USÉE

Étude d'impact environnemental

PLAN D'ENSEMBLE

TECSULT Tecsult Inc.
experts-conseils/consultants
MONTRÉAL, CANADA

Dessiné par	Vérifié par	Échelle	Date	N° contrat	ANNEXE:
P.H.	L.B.	-	JUILLET 2001	7953	G-1

V:\7953-Alcan\7953-1000-a-g.dwg/ 07-01 / ph

Appendix B - Correspondence Table

ENTREPÔT DE CONTENEURS	Container warehouse
BÂTIMENT BROYAGE ET ENTREPOSAGE	Building Crushing and storing
BÂTIMENT DU PROCÉDÉ LCLL	LCLL process building
ÉCHELLE GRAPHIQUE	Graphic Scale
RÉACTEURS DESTRUCTION DES CYANURES	Reactors Cyanide destruction
TOUR DE REFROIDISSEMENT	Cooling tower
NORD	North
USINE DE TRAITEMENT DE LA BRASQUE USÉE	SPENT POT LINING PROCESSING PLANT
ÉTUDE D'IMPACT ENVIRONNEMENTAL	Environmental Assessment Impact
TECSULT TECSULT INC.	TECSULT TECSULT INC.
PLAN D'ENSEMBLE	General Plan
BECHTEL QUEBEC LTEE, DESSIN 100-C-110	Bechtel Québec Ltd, drawing 100-C-110
DESSINÉ PAR	Drawn by
VÉRIFIÉ PAR	Verified by
ÉCHELLE	Scale
DATE JUILLET 2001	Date July 2001
N^{O} CONTRAT	Contract #
ANNEXE G-1	Appendix G-1

APPENDIX C

Material Safety Data Sheets

1. Product and company identification

Product name : Spent potlining.

SDS number : 000215

Synonym (s) : Spent cathodes.

Use (s) : Process by-product to be recycled.

Appearance and odour : Grey-black inorganic solid with an ammonia odour when wet.

Supplier :

Alcan Inc. Primary Metal Group
1188, Sherbrooke West
Montréal, Québec
Canada
H3A 3G1

Emergency phone : 1-800-567-7455 *
Phone : 514-848-8000
Fax : 514-848-8115/8116

* Please call collect for outside calls of North America.

Prepared by :

Alcan Toxicology Service
P.O. Box 1500, jonquière (Québec)
Canada, G7S 4L2

Phone: 418-699-2949
Fax : 418-699-2993
E-mail : servicetoxico@alcan.com

2. Hazards identification

On contact with water, basic or acidic solutions, releases toxic and flammable gases which may cause explosion. Beryllium may induce sensitization and cause a serious chronic lung disease. If a spill occurs, there is a surface water contamination hazard.

3. Composition / Information on ingredients

Components:

CAS	EC Number	Designation	Content	Warning symbol (s)	R phrase (s)
7440-44-0	231-153-3	Carbon	26 - 72%	-	-
7440-23-5	231-132-9	Sodium total	13 - 17 %	F, C	14/15, 4
1344-28-1	215-691-6	Aluminum oxide	11 - 22 %	-	-
16984-48-8	---------	Fluorides	5 - 18 %	-	-
7429-90-5	231-072-3	Aluminum	5 - 20 %	F	10, 15
11138-49-1	234-391-6	Aluminum sodium oxide	5 - 10 %	-	-
1344-00-9	215-684-8	Silicic acid, aluminum sodium salt	3 - 7 %	-	-
7440-21-3	231-130-8	Silicon	< 10 %	-	-
1305-78-8	215-138-9	Calcium oxide	< 3%	-	-
1299-86-1	215-076-2	Tetraaluminium tricarbide	< 2 %	-	-
---------	---------	Crystalline silica	< 2 %	-	-
---------	---------	Nitrides	< 1.5 %	-	-
1309-37-1	215-168-2	Diiron trioxide	< 2 %	-	-
57-12-5	---------	Cyanides	< 0.7 %	-	-
1309-48-4	215-171-9	Magnesium oxide	< 0.035 %	-	-
--------	--------	Total sulfur (SO_4)	< 0.5 %	-	-
--------	--------	Beryllium compounds	< 0.005 %	T+, T , Xi, N	49, 26, 25, 48/23, 36/37/38, 43, 51/53

Identification number of the European Commission relative to EINECS (European INventory of Existing Commercial chemical Substances) or ELINCS (European List of Notified Chemical Substances.).

4. First Aid

In case of dust exposure:

Inhalation : If overcome by vapours or dust, remove to a ventilated area. Consult a physician.

Skin contact : Remove contaminated clothes. Wash skin thoroughly with soap and water.

Eyes contact : Flush eyes thoroughly with water for at least 15 minutes, keeping the eyelids opened to assure a complete rinsing.

Ingestion : Do not induce vomiting. Call a physician.

5. Fire fighting measure (s)

Combustible.

Extinguishing media : Never use water. The reaction with water will emit toxic ammonia and explosive gases. Use dry chemicals (carbon dioxide). Spread the product outside and cover with sand. Wear a s elf-contained breathing apparatus if necessary.

Hazardous combustion product(s) :

If strongly heated may emits fluorides, hydrogen fluoride, hydrogen sulfide, hydrogen cyanide and carbon, sodium, sulfur or nitrogen oxides.

6. Accidental realease measures

Environmental protection / cleaning method(s):

Contain and collect, using methods which do not result in environmental contamination. Keep the material dry. Store in closed, unsealed containers. Place in appropriate containers. Avoid contaminating surface water, waterways or sewers leading to surface water.

7. Handling and storage

Handling precautions : Keep the material dry. Never transport when hot or wet. Avoid skin and eye contact.

Storage conditions :

Store in a dry, w ell-ventilated area, and sheltered from precipitation at any time (storage, handling, transportation). Put in dry containers, non-airtight, away from acids, bases and oxidising agents. Due to the reactivity of the product, it is important to ensure sufficient circulation of air at all times. This will maintain gas concentrations well below the lower explosive limit (LEL).

8. Exposure controls / Personal protection

Exposure controls / personal protection :

Provide general and local ventilation to maintain concentrations of air contaminants below recommended standards. Use an approved respirator designed for the hazard, where concentrations exceed exposure limits. Wear appropriate protective clothing to avoid contact with wet skin. Wear neoprene gloves to avoid skin contact. Change contaminated work clothing.

In case of exposure by inhalation to beryllium, levels above 0.1 µg/m³ or where the potential exists for significant risk of skin contact, ensure to maintain the cleanliness of workplace and application of appropriate personal hygiene measures. Clean work clothing should be provided and contact with personal clothing must be avoided. Access to beryllium work area should be restricted.

Exposure limits

CAS number	Designation	Exposure limits				
16984-48-8	Fluorides (en F)	**ACGIH (TLV®)**	**TWA:**	2.5 mg/m^3	**STEL :**	None
		OSHA (PEL)	**TWA:**	2.5 mg/m^3	**CEILING :**	None
		EC (OEL)	**TWA:**	2.5 mg/m^3	**STEL :**	None
74-90-8	Hydrogen cyanide	**ACGIH (TLV®)**	**TWA:**	None	**STEL :**	4.7 ppm (C)
		OSHA (PEL)	**TWA:**	10 ppm	**CEILING :**	None
		MEL	**TWA:**	None	**STEL :**	10 ppm

CAS number	Designation	Exposure limits				
1344-28-1	Aluminum oxide	**ACGIH (TLV®)**	**TWA:**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	15 mg/m^3	**CEILING :**	None
		OES	**TWA:**	10 mg/m^3	**STEL :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA:**	5 mg/m^3	**CEILING :**	None
		OES	**TWA:**	4 mg/m^3	**STEL :**	None
7429-90-5	Aluminum	**ACGIH (TLV®)**	**TWA:**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	15 mg/m^3	**CEILING :**	None
		OES	**TWA:**	10 mg/m^3	**STEL :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA:**	5 mg/m^3	**CEILING :**	None
		OES	**TWA:**	4 mg/m^3	**STEL :**	None
7664-41-7	Ammonia (NH_3)	**ACGIH (TLV®)**	**TWA:**	25 ppm	**STEL :**	35 ppm
		OSHA (PEL)	**TWA:**	50 ppm	**CEILING :**	None
		OES :	**TWA:**	25ppm	**STEL :**	35 ppm
7440-41-7	Beryllium (Be) *	**ACGIH (TLV®)**	**TWA:**	0.002 mg/m^3	**STEL :**	0.01 mg/m^3
		OSHA (PEL)	**TWA:**	0.002 mg/m^3	**CEILING :**	0.005 mg/m^3
		MEL	**TWA:**	0.002 mg/m^3	**STEL :**	None
1309-48-4	Magnesium oxide	**ACGIH (TLV®)**	**TWA:**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	15 mg/m^3	**CEILING :**	None
		OES	**TWA**	10 mg/m^3	**STEL :**	None
	• Respirable dust	**OES**	**TWA:**	4 mg/m^3	**STEL :**	None
1309-37-1	Iron oxide	**ACGIH (TLV®)**	**TWA:**	5 mg/m^3	**STEL :**	None
	• Fume, dust (Fe)	**OSHA (PEL)**	**TWA:**	10 mg/m^3	**CEILING :**	None
		OES	**TWA:**	5 mg/m^3	**STEL :**	10 mg/m^3
1332-58-7	Aluminum silicate	**ACGIH (TLV®)**	**TWA:**	2 mg/m^3	**STEL :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA:**	5 mg/m^3	**CEILING :**	None
		OES	**TWA:**	2 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	15 mg/m^3	**CEILING :**	None
1305-78-8	Calcium oxide	**ACGIH (TLV®)**	**TWA:**	2 mg/m^3	**STEL :**	None
		OSHA (PEL)	**TWA:**	5 mg/m^3	**CEILING :**	None
		OES	**TWA:**	2 mg/m^3	**STEL :**	None
14808-60-7	Silica (Quartz)	**ACGIH (TLV®)**	**TWA:**	0.05 mg/m^3	**STEL :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA:**	(10 mg/m^3) / (% SiO_2 + 2)	**CEILING :**	None
		MEL	**TWA:**	0.3 mg/m^3	**STEL :**	None
7440-21-3	Amourphous silicate	**ACGIH (TLV®)**	**TWA:**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	(80 mg/m^3) / (% SiO_2)	**CEILING :**	None
	• Respirable dust	**ACGIH (TLV®)**	**TWA:**	3 mg/m^3	**STEL :**	None
		OES	**TWA:**	1.2 mg/m^3	**STEL :**	None
592-01-8;151-50-8; 143-33-9	Cyanides (as CN)	**ACGIH (TLV®)**	**TWA:**	None	**STEL :**	5 mg/m^3 (C)
7440-21-3	Silicon	**ACGIH (TLV®)**	**TWA:**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA:**	15 mg/m^3	**CEILING :**	None
		OES	**TWA:**	10 mg/m^3	**STEL :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA:**	5 mg/m^3	**CEILING :**	None
		OES	**TWA:**	4 mg/m^3	**STEL :**	None

* DOE (Dept. of Energy, USA) has set an exposure limit value (TWA - 8 hours) of 0.0005 mg/m3 of air for workers exposure.

ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = Occupational Safety and Health Administration; EC= European Communities; OEL:= Occupational Exposure Limit values; TLV ®= Threshold Limit Value [USA]; PEL = Permissible Exposure Limit; TWA = Time-Weighted Average; STEL = Short Term Exposure Limit; C = Ceiling value; OELs = Occupational Exposure Limit values (France).; AEL= Average Exposure Limit values.; SEL= Short- therm Exposure Limits values; OES= Occupational Exposure Standards (United Kingdom); MEL= Maximun Exposure Limits; CAS = Number of Chemical Abstracts Service.)

9. Physical and chemical properties

pH :	Not applicable	**Flash point :**	Not applicable
Boiling point :	Not applicable	**Autoignition temperature :**	Not applicable
Melting point :	Not determined	**Lower flammable limit :**	Not applicable
Vapour pressure :	Not applicable	**Higher flammable limit :**	Not applicable
Vapour density (air=1)	Not applicable	**Explosive properties :**	Not determined
Evaporation rate :	Not applicable	**NFPA fire code :**	1
Relative density (water=1) :	2.0 - 2.5	**Oxidizing properties :**	Not determined
Water solubility :	Slight	**Partition coefficient (n-octanol/water) :**	Not determined
Odour threshold :	0.04-57 ppm (ammonia)		

10. Stability and reactivity

Stable (yes/no) : No

Conditions and material to avoid :

Avoid contact with water, acids, bases and intense heat. May react with strong oxidising agents.

Hazardous decomposition product(s) :

Emits toxic substances (ammonia) and flammable gases (hydrogen, methane and acetylene) on contact with bases, water or humidity. Emits fluorides, hydrogen fluoride, hydrogen sulfide, hydrogen cyanide and carbon, sodium, sulphur and nitrogen oxides at high temperatures or on contact with acids.

11. Toxicological information

Acute effects :

LD_{50} / LC_{50} :

CAS	Designation	LD 50 (oral rat)	LC 50
7440-21-3	Silicium	**3160 mg / kg**	**Unknown**

Inhalation : Severe irritation of the respiratory tract. Overexposure to dust and fumes containing beryllium may cause inflammation of the lung tissues. If high concentrations of ammonia are emitted, they can cause bronchospasm, dyspnea and chest pain.

Skin contact : Irritation. Beryllium in dust may gain entrance under the skin through superficial cuts and abrasions, with the potential to induce sensitization and to cause dermatitis (Granulomas). Free cyanides may be absorbed through wet skin.

Eyes contact : Irritation and burns.

Ingestion : Irritation of the gastrointestinal tract, nausea, vomiting; may be fatal if ingested in large quantities.

Chronic effects :

Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, with mottling of teeth (in children) and brittleness of bones. Prolonged exposure to crystalline silica: dyspnea, chest pain, decreased vital capacity and cough.

Inhalation : High exposure to beryllium caused by dust and fumes inhalation may cause sensitization. Beryllium sensitization may result in a serious progressive chronic lung disease called Chronic Beryllium Disease (CBD) or berylliosis. This allergic condition in which the lung tissues become inflamed, may be accompanied with pulmonary fibrosis.

Medical conditions aggravated by exposure to the product :

Respiratory diseases.

Carcinogenicity : NTP identifies respirable crystalline silica as known human carcinogen. IARC classifies crystalline silica in the form of quartz or cristobalite as carcinogenic to humans Groupe 1.

(NTP = National Toxicology Program [USA] IARC = International Agency for Research on Cancer)

IARC lists beryllium as a group 1 – Known Human Carcinogen. NTP lists beryllium as reasonabley anticipated to be a human carcinogen. ACGIH lists beryllium as an A1 – Confirmed Human Carginogen.

(IARC=International Agency for Research on Cancer; NTP=National Toxicology Program [USA]; OSHA=Occupational Safety and Health Administration [USA])

Mutagenicity : No data available.

Reproductive toxicity :

No data available.

Supplementary information :

A recommended practice for persons with continual high exposure to this dust is, aside from appropriate protective clothing and use of a NIOSH-approved respiratory protective device, to undergo a periodic medical examination by a physician specialized in occupational medecine. This exam may include the measurement of urinary fluoride levels.

(NIOSH = National Institute for Occupational Safety and Health)

ACGIH recommends that pre-shift urinary fluorides levels should not exceed 3 mg/g of creatinine and post-shift should not exceed 10 mg/g of creatinine for an 8 hour shift.

(ACGIH = American Conference of Governmental Industrial Hygienists)

Medical surveillance for beryllium is recommended for employees exposed to concentration higher than 0.1 µg/m³.

(ACGIH = American Conference of Governemental Hygienist)

12. Ecological information

Ecotoxicity : No data available about long term effects on the flora and fauna. Soluble fluorides may result from the leaching of that product.

Mobility : No data available about mobility of inorganic species.

Persistance/ biodegradability :

Low dissociation of cyanides in nature.

Bioaccumulation : No data available.

13. Disposal considerations

Methods of disposal :

Recycle if possible. Dispose of waste in accordance with federal, state, or local regulations. Waste should be tested to determine their hazardous characteristics. Do not incinerate. Use disposal methods which prevent leaching. Avoid contaminating surface water, waterways or sewers leading to surface water.

Waste classification :

16 11 01 " Carbon-based linings and refractories from metallurgical processes containing dangerous substances."

(Reference : Decree No. 2002-540 of April 18, 2002 relative to the classification of waste.)

Note : In United Kingdom this product is considered as a special waste under the "Environment Protection Special Waste Regulations 1996 (SI 1996/972)". Dispose of this product must be in accordance with the " Environmental (Duty of Care) Regulations 1991 (SI 1991/2839)".

14. Transport information

Put in dry and non-airtight containers. Never transport when hot or wet. Keep dry and sheltered from precipitation at any time (storage, handling, transportation). Due to the reactivity of the product, it is important to ensure sufficient circulation of air at all times. This will maintain gas concentrations well below the lower explosive limit (LEL).

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Transport in Canada :

Identification number: UN3170 ALUMINUM SMELTING BY-PRODUCTS
Classification: 4.3 "Water –reactive Substance" OMI: 4.3 (HMB; Hazardous Material in Bulk)
ICAO: 4.3 IATA: 4.3 Packing group: III

Railway transportation :

Transportation by train of pots for lining removal requires to cover them as specified in special permit 3275 of TDG (Canada).
Transportation by rail of spent potlining is governed by special permit SR4204 – move in special vented containers**.**

Transport in United States :

Identification number: UN3170 ALUMINUM SMELTING BY PRODUCTS
Classification: 4.3 "Water-reactive Substances" IMO: 4.3 (HMB; Hazardous Material in Bulk)
ICAO: 4.3 IATA: 4.3 Packing group: III

NOTE: Rail transport is possible only via special permit #SP4406 – Dross in vented box car.

Transport in Europe :

Identification number : UN3170 ALUMINUM SMELTING BY PRODUCTS
Classification: 4.3, Classification code : W2, Hazard identification number : 423 , Packing group: III
IMO : 4.3 (HMB : Hazardous Material in Bulk) ICAO : 4.3 IATA : 4.3

Maritime transportation in bulk :

- Notify the nearest Coast Guard Ship Safety office at least seven (7) days before loading.
- The material must always be handled and stored in w eather-proof areas.
- During at least three days before shipping the material must be continuously stored in w eather-proof areas but exposed to air. During this period, the sizing of the particles must not be changed by handling or mechanical process.
- Provide to both the Master and the Ship Safety Branch of the Coast Guard a shipper's declaration including all safety precautions to be followed during loading and carriage of the material.
- The vessels are to be provided with mechanical explosion proof fans capable of providing cinq (5) air changes per hour (based on the empty cargo hold space) and of preventing any escaping gases to reach living quarters or working areas. These fans must operate continuously.
- During loading, "NO SMOKING" signs are to be posted on decks and in areas adjacent to cargo compartments.

(IMO = International Maritime Organization; ICAO = International Civil Aviation Organization; IATA = International Air Transport Association.)

15. Regulatory information

Canadian regulation :

WHMIS classification :

Not controlled

Export and import of Hazardous Waste : a notice shall be given by exporter or importer, in compliance with the Canadian Environmental Protection Act.

WHMIS : Working Hazardous Material Information System.

European Union classification :

Warning symbol(s) :

F

Highly Flammable

Risk phrase(s) :

R15/29: Contact with water liberates toxic, highly flammable gases.

R18 : In use, may form flammable/explosive vapour-air mixture.

R23 : Toxic by inhalation.

R34: Causes burns.

R41: Risk of serious damage to eyes.

R38 : Irritating to skin.

Safety phrase(s) :

S3/9 : Keep in a cool, well ventilated place.

S24/25: Avoid contact with skin and eyes.

S22 : Do not breathe dust.

S56 : Do not discharge into drains or the environment, dispose to an authorised waste collection point.

Reference :

Directive 67/548/CEE on classification, packaging and labelling of dangerous substances.

Directive 1999/45/CEE relative to classification, packaging and labelling of dangerous substances.

USA regulation(s) :

Supplier Notification :

This product contains trace amounts of beryllium. Any process resulting in dust exposure may result in a daily dose of beryllium of over 0.1 µg/day, the dose above which the "California Safe Drinking Water and Toxic Enforcement Act of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines.

Section 313

This product does not contain any chemicals in concentrations subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372.

16. Other information

Although the information in this SDS was obtained from sources which we believe to be reliable, it cannot be guaranteed. In addition, this information may be used in a manner beyond our knowledge or control. The information is therefore provided for advice purposes only, without any representation or warranty express or implied.

This safety data sheet is in accordance whit WHMIS, directives 2001/58/CE and AINSI Z400.1-2003.

Version 1 : 2005-03-29

MATERIAL SAFETY DATA SHEET

PRODUCT

STABREX® ST90

EMERGENCY TÉLÉPHONE NUMBER

(800) 463-3216 (24 hours)

1. IDENTIFICATION OF PRODUCT AND COMPANY

PRODUCT NAME:	**STABREX® ST90**
APPLICATION/USAGE:	CONTRÔL OF MICROORGANISMS
DÉSIGNATION/CHEMICAL DESCRIPTION:	Inorganic salt(s), Caustic
COMPANY NAME:	ONDEO Nalco Canada Co. 1055 Truman Street Burlington, Ontario L7R 3Y9
EMERGENCY TELEPHONE NUMBER:	(800) 463-3216 (24 hours)

NFPA 704M/HMIS RATING
HEALTH: 3/3 FLAMMABILITY: 1/1 RÉACTIVITY: 0/0 OTHER:
0 = Not significant 1 = Slight 2 = Average 3 = High 4 = Extreme

2. PRODUCT COMPOSITION/INGREDIENT INFORMATION

According to our evaluation of risks and hazards, the following chemical ingredients are hazardous:

HAZARDOUS INGREDIENTS	CAS #	Mass %
Sodium hydroxide	1310-73-2	1.0 – 5.0
Sodium hypobromite	13824-96-9	10.0 – 20.0

3. HAZARD IDENTIFICATION

****EMERGENCY SITUATION OVERVIEW****

KEEP OUT OF REACH OF CHILDREN. Corrosive to skin and eyes. Avoid contact with eyes, skin and clothing. May be fatal if swallowed or inhaled. Do not ingest. Do not breathe in product's vapours or mists.
Wear safety glasses and face shield, protective coveralls, boots and gloves during transfer and handling. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before re-wearing. Use only with sealed transfer and mixing systems.
In case of contact with reactive metals (e.g., aluminium), there is a risk of flammable hydrogen gas formation. Risk of nitrogen oxide emission in case of fire. Risk of chlorine emission in case of fire.

ACUTE HEALTH RISKS:

CONTACT WITH EYES:
Corrosive. Causes ocular burning and permanent lesions.

CONTACT WITH SKIN:
Can cause serious irritation or destroy tissue, depending on duration of exposure and nature of first aid received.

INGESTION:
Unlikely exposure pathway. Corrosive; causes chemical burns in the mouth, throat and stomach.

INHALATION:
Unlikely exposure pathway. In strong concentrations, irritates eyes, nose, throat and lungs.

AGGRAVATION OF EXISTING CONDITIONS:
Available data do not suggest any aggravation of existing conditions.

CHRONIC HEALTH RISKS:
No toxic effects are predicted besides those mentioned above.

4. FIRST AID

CONTACT WITH EYES:
IN CASE OF CONTACT, IT IS ESSENTIAL TO ACT QUICKLY. Immediately flush eyes with running water for at least 15 minutes while holding eyelids open. Obtain medical care immediately.

CONTACT WITH SKIN:
Immediately flush with running water for at least 15 minutes. In case of significant splashing, flush the entire body under the shower. Remove contaminated clothing. Wash the affected parts immediately with running water. Obtain medical care immediately. Clean clothing, shoes and contaminated leather articles before re-wearing or discard them.

INGESTION:
DO NOT INDUCE VOMITING. If subject is conscious, rinse the mouth and encourage subject to drink water. Obtain medical care immediately.

INHALATION:
Get victim to fresh air, encourage victim to rest and then treat symptoms. Obtain medical care.

CONTACT WITH EYES: Rinse immediately with running water for at least 20 minutes. Obtain medical care immediately.

CUTANEOUS CONTACT: Wash affected parts thoroughly with lots of soap and water for at least 20 minutes. Remove contaminated clothing and/or shoes. Obtain medical care.

INHALATION: Get victim to fresh air. If victim is having trouble breathing, administer oxygen. If symptoms persist, obtain medical care.

INGESTION: Rinse the mouth with water. Encourage victim to drink 1 or 2 glasses of water. Do not induce vomiting. Obtain medical care immediately.

NOTE TO PHYSICIAN:
The probability of lesions to mucous membranes contraindicates gastric lavage. It is up to the physician's best judgement how to manage symptoms and clinical manifestations, depending on subject's reactions.

5. FIRE-FIGHTING MEASURES

Flash point: None

LOWER EXPLOSIVITY LIMIT: Non-flammable.

UPPER EXPLOSIVITY LIMIT: Non-flammable.

EXTINGUISHING MEDIA:
Should not burn. Use extinguishing media allowing a concentric attack against the fire.

RISKS OF FIRE AND EXPLOSION:
In case of contact with reactive metals (e.g., aluminium), there is a risk of flammable hydrogen gas formation. Risk of nitrogen oxide emission in case of fire. Risk of chlorine emission in case of fire.

SPECIAL PROTECTIVE FIRE-FIGHTING EQUIPMENT:
In case of fire, wear personal respiratory device and protective coveralls.

IMPACT SENSITIVITY:
Should not be sensitive to mechanical impacts.

SENSITIVITY TO STATIC ELECTRICAL CHARGES:
Not suspected to be sensitive to static electricity.

6. ACCIDENTAL RELEASE MEASURES

PARTICULAR PRECAUTIONS:
Limit access to area until clean up completed. Be sure clean up performed by properly trained personnel. Ventilate release areas if possible. Do not touch released material. Stop release, or reduce if no hazard is presented. Use protective equipment recommended in Section 8. Notify governmental job health and safety and environmental protection authorities.

CLEAN UP METHODS:
SMALL SPILLS: Collect spilled material with absorbent substance. Deposit in appropriate sealed receptacle bearing required label. Wash affected area. MAJOR SPILLS: Contain liquid with absorbent substance, by trenching or damming. Collect in salvage drums or tank trucks for disposal. Wash spill area well with water. Contact certified waste transporter for disposal of salvaged contaminated material. Dispose of material following regulation mentioned in Section 13 (Disposal Considerations).

ENVIRONMENTAL PROTECTION PRECAUTIONS:
This product is toxic to fish. Avoid release into lakes, streams, ponds and public watercourses. Do not contaminate water when cleaning up the material or disposing of waste. This product must be used strictly according to label indications.

7. STORAGE AND HANDLING

HANDLING:
Avoid any splashing into eyes, onto skin or clothing. Do not ingest. Use only with adequate ventilation. Avoid formation of aerosols and mists. Keep containers sealed when not in use. Emergency equipment (in case of fire, release, spill, etc.) must be easily accessible.

STORAGE CONDITIONS:
Store in properly labelled containers. Do not store with acids. Store in a well-ventilated and cool area protected from sunlight.

INAPPROPRIATE CONSTRUCTION MATERIALS:
Pinchbeck, nickel

8. EXPOSURE CONTROL MEASURES/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
Exposure guidelines have not been established for this product. Known exposure limits for one or more of the ingredients are listed below:

TLV-ACGIH Value:
Substance(s)

Sodium hydroxide	CEILING: 2 mg/m3

PEL-OSHA Limit:
Substance(s)

Sodium hydroxide	CEILING: 2 mg/m3

ENGINEERING MEASURES:
Use a general ventilation system. Use a local exhaust ventilation (LEV) system at the source as needed to control vapours and mists suspended in the air.

RESPIRATORY PROTECTION:
When a significant release of mist, vapours or aerosols is present, wearing a certified respirator is recommended. Use as needed a cartridge that protects against dust, mist and fumes. In case of emergency, or if it is necessary to enter areas containing unknown concentrations, wear personal positive-pressure respiration device and full mask. If wearing respiratory protection proves necessary, implement a complete respiratory protection program, covering choice, testing, training, maintenance and inspection of devices.

HAND PROTECTION:
VITON, NEOPRENE, NITRILE OR NATURAL RUBBER

SKIN PROTECTION:
Wear an apron resistant to chemical products, safety glasses and boots and impervious boots. Wearing impervious coveralls is recommended if there is a risk of high exposure.

EYE PROTECTION:
Wear a facial shield and safety glasses designed for protection against chemical products.

HYGIENE INFORMATION:
Presence of ocular flushing capability and emergency showers is mandatory. If clothing is contaminated, remove and wash affected articles. Machine wash before re-wearing.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Transparent
ODOUR	Odourless

DENSITY	1.32 – 1.36 @ 25°C
SOLUBILITY IN WATER	Complete
pH (100%)	> 13
FREEZING POINT	-8.5 °C
VAPOUR PRESSURE	7.7 mm Hg, 115 mm Hg @ 25°C, 46°C
VOC CONTENT	0.00 %

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:
Stable under normal conditions.

HAZARDOUS POLYMERIZATION:
Will not produce hazardous polymerization.

CONDITIONS TO AVOID:
High temperatures

SITUATIONS TO AVOID:
Risk of release of heat and toxic vapours, splashing and boiling, contact with strong acids (e.g., sulphuric, phosphoric, nitric, chromic or sulphonic). Avoid any contact with organic materials (rags, sawdust, oils or hydrocarbon-based solvents) or reducing agents (e.g., hydrazine, sulphites, sulphurs, aluminium or magnesium powder), which may produce the release of heat, fire, explosion and toxic fumes.
Other sodium hypochlorite-based products or bleaching agents

HAZARDOUS PRODUCTS OF DECOMPOSITION:
In case of fire: Chlorine, bromine, nitrogen oxides

11. TOXICOLOGICAL INFORMATION

No toxicology study has been carried out on this product.

SENSITIZATION:
This product is not presumed to be a sensitizing agent.

CARCENOGENICITY:
This product does not contain any component included on the International Agency for Research on Cancer (IARC) list of carcinogenic substances or classified as such by the American Conference of Governmental Industrial Hygienists (ACGIH).

12. ECOLOGICAL DATA

ECOTOXICOLOGICAL EFFECTS

Results below are in reference to the product.

RESULTS OF ACUTE TOXICITY FOR FISH:

Species	Exposure	CL50	Substance tested
Rainbow trout	96 hours	4.5 mg/l	Product
Sheepshead minnow	96 hours	17 mg/l	Product
Fathead minnow	96 hours	8.3 mg/l	Product

Rating: Toxic

RESULTS OF ACUTE TOXICITY FOR INVERTEBRATES:

Species	Exposure	CL50	CE50	Substance tested
Daphnia magna	48 hours	4.2 mg/l		Product
Mysis (M. bahia)	96 hours	27 mg/l		Product
Ceriodaphnia dubia	48 hours	1.6 mg/l		Product

Rating: Toxic

RESULTS OF CHRONIC TOXICITY FOR INVERTEBRATES:

Species	Test Type	IC25	End Point	Substance tested
Ceriodaphnia dubia	3 Brood	15.6 mg/l	Reproduction	Product

13. DISPOSAL CONSIDERATIONS

For Porta-Feed system: 1. Close valve. 2. Take the steps necessary for returning Porta-Feed reservoirs. For all other containers: 1. Thoroughly rinse the empty container, and use flushing liquids at treatment site. 2. Follow provincial instructions for any additional clean up of container before disposal. 3. Dispose of container in accordance with provincial requirements. For more information on disposal of unused or extra

quantity and clean up of release areas, communicate with the provincial organization responsible for product regulation or with the manufacturer.

14. TRANSPORT INFORMATION

Official transport and risk classification designations may vary depending on packaging, product properties and transport method. As a general rule, official transport designations for this product are as follows:

CORROSIVE LIQUID, BASIC, INORGANIC, (SODIUM HYPOBROMITE) N.O.S., Category 8, ONU3266, Packing Group II

15. REGULATORY INFORMATION

NATIONAL REGULATION, CANADA:

WHMIS:
This product has been classified in accordance with risk criteria defined in the Controlled Products Regulations, and its Material Safety Data Sheet contains all the information required by those Regulations.

WHMIS CLASSIFICATION:
Pesticides regulated by the Pest Control Products Act are not regulated under WHMIS.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):
Each component of this product included on the Domestic Substance List (DSL) is exempt from or has been declared to conform to the New Substances Notification Regulations.

NATIONAL POLLUTANT RELEASE INVENTORY:
This product does not contain any substance included in Annex I of the NPRI for which the concentration is equal to or greater than 1% in weight.

CANADIAN FOOD INSPECTION AGENCY:
Usage authorized under category W2

PEST CONTROL PRODUCTS ACT:
Registration number: 25478

U.S. FEDERAL REGULATION:

TOXIC SUBSTANCES CONTROL ACT -TSCA:
The chemical ingredients of this product are listed in Inventory 8(b) (40 CFR 710).

16. OTHER INFORMATION

The product must be used in applications conforming to the health and safety information contained in this MSDS. Anyone handling this product must be informed about the necessary precautions to take and must have ready access to that information for reference. For any other usage, exposure must be evaluated to

facilitate material-handling practices and training programs best ensuring workplace safety. For further information, please contact your technical representative.

Written by: Management
Publication date: 2000/02/01
Replaces: 1998/04/01

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 8590

EMERGENCY TÉLÉPHONE NUMBER

(800) 463-3216 (24 hours)

1. IDENTIFICATION OF PRODUCT AND COMPANY

PRODUCT NAME:	**NALCO 8590**
APPLICATION/USAGE:	COOLING WATER INHIBITOR
DÉSIGNATION/CHEMICAL DESCRIPTION:	Water, Phosphate, Substituted Thiazole(s)
COMPANY NAME:	ONDEO Nalco Canada Co. 1055 Truman Street Burlington, Ontario L7R 3Y9
EMERGENCY TELEPHONE NUMBÉR:	(800) 463-3216 (24 hours)

NFPA 704M/HMIS RATING
HEALTH: 1/2 FLAMMABILITY: 1/1 RÉACTIVITY: 0/0 OTHER:
0 = Not significant 1 = Slight 2 = Average 3 = High 4 = Extreme

2. PRODUCT COMPOSITION/INGREDIENT INFORMATION

According to our evaluation of risks and hazards, the following chemical ingredients are hazardous:

HAZARDOUS INGRÉDIENTS	CAS #	Mass %
Potassium hydroxide	1310-58-3	0.1 – 1.0
Sodium tolyltriazole	64665-57-2	1.0 – 5.0

3. HAZARD IDENTIFICATION

****EMERGENCY SITUATION OVERVIEW****

WARNING

Irritating to skin and eyes. Avoid any splashing into eyes and onto skin or clothing. Do not ingest. Keep container well sealed. In case of contact with eyes, rinse immediately with running water, and consult a physician. After skin contact, wash immediately with running water. Protect from freezing. Wear proper protective clothing, gloves and eye/face protection. Risk of carbon oxide (CO) emission in case of fire. Risk of nitrogen oxide emission in case of fire. Risk of phosphorus oxide emission in case of fire.

ACUTE HEALTH RISKS:

CONTACT WITH EYES:
Risk of average to serious irritation.

CONTACT WITH SKIN:
Risk of average irritation.

INGESTION:
Unlikely exposure pathway. No toxic effect is anticipated.

INHALATION:
Unlikely exposure pathway. In aerosol and mist forms, this product may irritate upper respiratory tract.

CHRONIC HEALTH RISKS:
No toxic effects are predicted besides those mentioned above.

4. FIRST AID

CONTACT WITH EYES:
Immediately flush the eyes with running water for at least 15 minutes while holding eyelids open. If irritation persists, flush again. Immediately obtain medical care.

CONTACT WITH SKIN:
Flush immediately with running water for at least 15 minutes. If symptoms persist, call a physician.

INGESTION:
Do not induce vomit until checking with physician first. If the subject is conscious, rinse out mouth and encourage subject to drink water. Obtain medical care.

INHALATION:
Get victim to fresh air, encourage rest and treat symptoms. Obtain medical care.

NOTE TO PHYSICIAN:
It is up to the physician's best judgement how to manage symptoms and clinical manifestations, depending on subject's reactions

5. FIRE-FIGHTING MEASURES

Flash point: > 100° C (Pensky-Martens Closed Cup (PMCC))

EXTINGUISHING MEDIA:
This product should not burn unless all water has first been evaporated by boiling. Residual organic matter may be flammable. Cool containers by spraying with water. Use extinguishing media allowing a concentric attack against the fire.

RISKS OF FIRE AND EXPLOSION:
Risk of carbon oxide emission (CO) in case of fire. Risk of nitrogen oxide emission in case of fire. Risk of phosphorus oxide emission in case of fire.

SPECIAL PROTECTIVE FIRE-FIGHTING EQUIPMENT:
In case of fire, wear personal respiratory device and protective coveralls.

IMPACT SENSITIVITY:
Should not be sensitive to mechanical impacts.

SENSITIVITY TO STATIC ELECTRICAL CHARGES:
Not suspected to be sensitive to static electricity.

6. ACCIDENTAL RELEASE MEASURES

PARTICULAR PRECAUTIONS:
Limit access to area until clean up completed. Be sure clean up performed by properly trained personnel. Ventilate release areas if possible. Do not touch released material. Stop release, or reduce if no hazard is presented. Use protective equipment recommended in Section 8. Notify governmental job health and safety and environmental protection authorities.

CLEAN UP METHODS:
SMALL SPILLS: Collect spilled material with absorbent substance. Deposit in appropriate sealed receptacle bearing required label. Wash affected area. MAJOR SPILLS: Contain liquid with absorbent substance, by trenching or damming. Collect in salvage drums or tank trucks for disposal. Wash spill area well with water. Contact certified waste transporter for disposal of salvaged contaminated material. Dispose of material following regulation mentioned in Section 13 (Disposal Considerations).

ENVIRONMENTAL PROTECTION PRECAUTIONS::
Avoid contamination of ground water.

7. STORAGE AND HANDLING

HANDLING:
Avoid contact with eyes and skin. Do not ingest. Avoid any splashing into eyes and onto skin or clothing. Emergency equipment (in case of fire, release, spill, etc.) must be easily accessible. Be sure all containers are labelled. Keep containers sealed when not in use. Use only use with proper ventilation.

STORAGE CONDITIONS:
Store in well-sealed and properly labelled containers.

8. EXPOSURE CONTROL MEASURES/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
Exposure guidelines have not been established for this product. Known exposure limits for one or more of the ingredients are listed below:

TLV-ACGIH value:
Substance(s)
Potassium hydroxide CEILING: 2 mg/m3

PEL-OSHA limit:
Substance(s)
Potassium hydroxide CEILING: 2 mg/m3

ENGINEERING MEASURES:
Use a general ventilation system.

RESPIRATORY PROTECTION:
It is not usually necessary to wear respiratory protection.

HAND PROTECTION:
Neoprene, nitrile, butyl or PVC gloves

SKIN PROTECTION:
Wear usual protective clothing.

EYE PROTECTION:
Wear safety glasses protecting against chemical products.

HYGIENE INFORMATION:
If clothing is contaminated, remove and wash affected articles. Machine wash before re-wearing.
Presence of ocular flushing capability and emergency showers is mandatory.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Amber
ODOUR	Slight

DENSITY	1.47 @ 25 °C
SPECIFIC MASS	1.47 g/cm3
SOLUBILITY IN WATER	Complete
pH (100%)	13.5
FREEZING POINT	-20°C
VAPOUR PRESSURE	Same as water

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:
Stable under normal conditions.

HAZARDOUS POLYMERIZATION:
Will not produce hazardous polymerization.

CONDITIONS TO AVOID:
Freezing temperatures

SITUATIONS TO AVOID:
Risk of release of heat and toxic vapours, splashing and boiling, contact with strong acids (e.g., sulphuric, phosphoric, nitric, chlorhydric, chromic and sulphonic).

HAZARDOUS PRODUCTS OF DECOMPOSITION:
In case of fire: Oxides of carbon, nitrogen and phosphorus

11. TOXICOLOGICAL INFORMATION

No toxicology study has been carried out on this product.

SENSITIZATION:
This product is not presumed to be a sensitizing agent.

CARCENOGENICITY:
This product does not contain any component included on the International Agency for Research on Cancer (IARC) list of carcinogenic substances or classified as such by the American Conference of Governmental Industrial Hygienists (ACGIH).

12. ECOLOGICAL DATA

ECOTOXICOLOGICAL EFFECTS

Results below are in reference to the product.

RESULTS OF ACUTE TOXICITY FOR FISH:

Species	Exposure	CL50	Substance tested
Bluegill	96 hours	700 mg/l	Product
Rainbow trout	96 hours	420 mg/l	Product
Bluegill	96 hours	700 mg/l	Product
Rainbow trout	96 hours	420 mg/l	Product

Rating: Slightly toxic

13. DISPOSAL CONSIDERATIONS

Product wastes belong to class 263C under Ontario's Regulation 347

Dispose of wastes in an incinerator, waste treatment centre or disposal site certified in accordance with current regulations. Do not dispose of wastes in sewers or with ordinary refuse.

14. TRANSPORT INFORMATION

The official transport and risk classification designations may vary depending on packaging, product properties and transport method. As a general rule, official transport designations for this product are as follows:

CORROSIVE LIQUID, (POTASSIUM HYDROXIDE), N.O.S., Category 8 (9.2), ONU1760, Packing Group III

15. REGULATORY INFORMATION

NATIONAL REGULATION, CANADA:

WHMIS:
This product has been classified in accordance with risk criteria defined in the Controlled Products Regulations, and its Material Safety Data Sheet contains all the information required by those Regulations.

WHMIS CLASSIFICATION:
Pesticides regulated by the Pest Control Products Act are not regulated under WHMIS.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):
Each component of this product included on the Domestic Substance List (DSL) is exempt from or has been declared to conform to the New Substances Notification Regulations.

NATIONAL POLLUTANT RELEASE INVENTORY:
This product does not contain any substance included in Annex I of the NPRI for which the concentration is equal to or greater than 1% in weight.

CANADIAN FOOD INSPECTION AGENCY:
Usage authorized under category W2

PEST CONTROL PRODUCTS ACT:
Registration number: 25478

U.S. FEDERAL REGULATION:

TOXIC SUBSTANCES CONTROL ACT -TSCA:
The chemical ingredients of this product are listed in Inventory 8(b) (40 CFR 710).

16. OTHER INFORMATION

The product must be used in applications conforming to the health and safety information contained in this MSDS. Anyone handling this product must be informed about the necessary precautions to take and must

have ready access to that information for reference. For any other usage, exposure must be evaluated to facilitate material-handling practices and training programs best ensuring workplace safety. For further information, please contact your technical representative.

Written by: Management
Publication date: 1999/05/06
Replaces: 1996/06/14

MATERIAL SAFETY DATA SHEET

PRODUCT

TRASAR® 23222

EMERGENCY TÉLÉPHONE NUMBER

(800) 463-3216 (24 hours)

1. IDENTIFICATION OF PRODUCT AND COMPANY

PRODUCT NAME:	**TRASAR® 23222**
APPLICATION/USAGE:	TREATMENT OF COOLING WATER
DÉSIGNATION/CHEMICAL DESCRIPTION:	Water, Inorganic acid(s), Inorganic salt(s), Acrylic polymer(s), Polycarboxylic acid(s)
COMPANY NAME:	ONDEO Nalco Canada Co. 1055 Truman Street Burlington, Ontario L7R 3Y9
EMERGENCY TÉLÉPHONE NUMBER:	(800) 463-3216 (24 hours)

NFPA 704M/HMIS RATING
HEALTH: 1/1 FLAMMABILITY: 1/1 RÉACTIVITY: 0/0 OTHER:
0 = Not significant 1 = Slight 2 = Average 3 = High 4 = Extreme

2. PRODUCT COMPOSITION/INGREDIENT INFORMATION

According to our evaluation of risks and hazards, the following chemical ingredients are hazardous:

HAZARDOUS INGRÉDIENTS	CAS #	Mass %
Phosphoric acid	7664-38-2	1.0 – 5.0
Zinc chloride	7646-85-7	1.0 – 5.0
Sodium bisulfate	7681-38-1	1.0 – 5.0

3. HAZARD IDENTIFICATION

****EMERGENCY SITUATION OVERVIEW****

ATTENTION

Prolonged contact may be irritating.
Avoid any splashing into eyes, onto skin or clothing. Do not ingest. Keep container well sealed. In case of contact with eyes, rinse immediately with running water, and consult a physician. After contact with the skin, wash immediately with running water. Protect from freezing. Wear proper protective clothing, gloves and eye/face protection. Risk of carbon oxide emissions (CO) in case of fire. Risk of sulphur oxide emissions in case of fire. Risk of hydrochloric acid (HCl) emissions in case of fire. Risk of phosphorus oxide emissions in case of fire.

ACUTE HEALTH RISKS:

CONTACT WITH EYES:
Risk of slight or average irritation.

CONTACT WITH SKIN:
Risk of slight irritation.

INGESTION:
Unlikely exposure pathway. May be toxic if ingested.

INHALATION:
Unlikely exposure pathway. In case of repeated or prolonged exposure, there is a risk of respiratory irritation.

CHRONIC HEATH RISKS:
No toxic effects are predicted besides those mentioned above.

4. FIRST AID

CONTACT WITH EYES:
Rinse affected parts with water. If symptoms appear, consult a physician.

CONTACT WITH SKIN:
Rinse affected parts with water. If symptoms appear, consult a physician.

INGESTION:
Do not induce vomit until checking with physician first. If the subject is conscious, rinse out mouth and encourage subject to drink water. If symptoms appear, consult a physician.

INHALATION:
Get victim to fresh air, encourage rest and treat any symptoms. If symptoms appear, consult a physician.

NOTE TO PHYSICIAN:
It is up to the physician's best judgement how to manage symptoms and clinical manifestations, depending on subject's reactions.

5. FIRE-FIGHTING MEASURES

Flash point: None

LOWER EXPLOSIVITY LIMIT: Non-flammable.

UPPER EXPLOSIVITY LIMIT: Non-flammable.

EXTINGUISHING MEDIA:
This product should not burn unless boiling has evaporated all water. Residual organic matter may be flammable. Cool containers by spraying with water. Use extinguishing media allowing a concentric attack against the fire.

RISKS OF FIRE AND EXPLOSION:
Risk of carbon oxide emission (CO) in case of fire. Risk of sulphur oxide emission in case of fire. Risk of hydrochloric acid (HCl) emission in case of fire. Risk of phosphorus oxide emission in case of fire.

SPECIAL PROTECTIVE FIRE-FIGHTING EQUIPMENT:
In case of fire, wear personal respiratory device and protective coveralls.

IMPACT SENSITIVITY:
Should not be sensitive to mechanical impacts.

SENSITIVITY TO STATIC ELECTRICAL CHARGES:
Not suspected to be sensitive to static electricity.

6. ACCIDENTAL RELEASE MEASURES

PARTICULAR PRECAUTIONS:
Limit access to area until clean up completed. Ventilate release areas if possible. Do not touch released material. Stop release, or reduce if no hazard is present. Use protective equipment recommended in Section 8.

CLEAN UP METHODS:
SMALL SPILLS: Cover spilled material with absorbent substance. Deposit in appropriate sealed receptacle bearing required label. Wash affected area. MAJOR SPILLS: Contain liquid with absorbent substance, by trenching or damming. Collect in salvage drums or tank trucks for disposal. Contact certified waste transporter for disposal of salvaged contaminated material. Dispose of material following regulation mentioned in Section 13 (Disposal Considerations).

ENVIRONMENTAL PROTECTION PRECAUTIONS::
Avoid contamination of ground water.

7. STORAGE AND HANDLING

HANDLING:
Avoid contact with eyes and skin. Do not ingest. Use only with adequate ventilation. Avoid formation of aerosols and mists. Be sure all containers are labelled. Keep containers sealed when not in use. Use only use with proper ventilation.

STORAGE CONDITIONS:
Store in well-sealed and properly labelled containers.

INAPPROPRIATE CONSTRUCTION MATERIALS:
This product corrodes aluminium. Do not use aluminium supply, storage or transport materials.

8. EXPOSURE CONTROL MEASURES/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
Exposure guidelines have not been established for this product. Known exposure limits for one or more of the ingredients are listed below:

TLV-ACGIH value:
Substance(s)

Phosphoric acid	TWA (Time Weighted Average): 1 mg/m3 STEL (Short-Term Exposure Limit): 3 mg/m3
	TWA (Time Weighted Average): 1 mg/m3 STEL (Short-Term Exposure Limit): 2 mg/m3

PEL-OSHA limit:
Substance(s)

Phosphoric acid	TWA (Time Weighted Average): 1 mg/m3 STEL (Short-Term Exposure Limit): 3 mg/m3
	TWA (Time Weighted Average): 1 mg/m3 STEL (Short-Term Exposure Limit): 2 mg/m3

ENGINEERING MEASURES:
Use a general ventilation system.

RESPIRATORY PROTECTION:
It is not usually necessary to wear respiratory protection.

HAND PROTECTION:
Neoprene, nitrile, butyl or PVC gloves

SKIN PROTECTION:
Wear usual protective clothing.

EYE PROTECTION:
Wear safety glasses protecting against chemical products.

HYGIENE INFORMATION:
If clothing is contaminated, remove and wash affected articles. Machine wash before re-wearing.
Presence of ocular flushing capability and emergency showers is mandatory.

PERSONAL EXPOSURE CHARACTERIZATION:
For product application, we recommend personal protective equipment (PPE). Exposure potential is average.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Light amber yellow
ODOUR	Odourless

DENSITY	1.08 – 1.16 @ 25°C
SPECIFIC MASS	1.08 – 1.16 g/cm3
SOLUBILITY IN WATER	Complete
pH (100%)	1.3 – 2.5
VISCOSITY	6 cps @ 20 °C
FREEZING POINT	-3.3 °C
BOILING POINT	100°C
VOC CONTENT	0.00 %

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:
Stable under normal conditions.

HAZARDOUS POLYMERIZATION:
Will not produce hazardous polymerization.

CONDITIONS TO AVOID:
Freezing temperatures

SITUATIONS TO AVOID:
Risk of release of heat and toxic vapours, splashing and boiling, contact with strong alkalis (e.g., ammonia and its solutions, carbonates, sodium hydroxide (caustic soda), potassium hydroxide, calcium hydroxide (chalk), cyanides, sulphides, hypochlorites and chlorites). In case of contact with reactive metals (e.g., aluminium), risk of flammable hydrogen gas formation exists.

HAZARDOUS PRODUCTS OF DECOMPOSITION:
In case of fire: Carbon oxides, sulphur oxides, HCl, phosphorus oxides

11. TOXICOLOGICAL NFORMATION

The results below apply to a similar product.

PRIMARY SKIN IRRITATION:

Draize test results	Substance tested
1.6/8.0	Similar product

Rating: Slightly irritating

PRIMARY EYE IRRITATION:

Draize test results	Substance tested
13/110.0	Similar product

Rating: Almost non-irritating

CARCENOGENICITY:
This product does not contain any component included on the International Agency for Research on Cancer (IARC) list of carcinogenic substances or classified as such by the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION:
Our characterization is that the hazards and potential hazards for humans are slight.

12. ECOLOGICAL DATA

ECOTOXICOLOGICAL EFFECTS

The results below apply to a similar product.
RESULTS OF ACUTE TOXICITY FOR FISH:

Species	Exposure	CL50	Substance tested
Rainbow trout	96 hours	42 mg/l	Similar product
Fathead minnow	96 hours	80 mg/l	Similar product

Rating: Slightly toxic

RESULTS OF ACUTE TOXICITY FOR INVERTEBRATES:

Species	Exposure	CL50	CE50	Substance tested
Daphnia magna	48 hours	380 mg/l		Similar product

Rating: Essentially non-toxic

PERSISTENCE AND BIODEGRADABILITY:

Chemical Oxygen Demand (COD): 104.000 mg/l

Biological Oxygen Demand (BOD):

Incubation Period	Value	Substance tested
	7.100 mg/l	Product

CHARACTERIZATION OF ENVIRONMENTAL EXPOSURE AND HAZARDS
Our characterization of product hazards and potential hazards is *Average*.
According to product characteristics and recommended application, the potential for environmental exposure is *High*.

13. DISPOSAL CONSIDERATIONS

Product wastes belong to class 263C under Ontario's Regulation 347

Dispose of wastes in an incinerator, waste treatment centre or disposal site certified in accordance with current regulations. Do not dispose of wastes in sewers or with ordinary refuse.

14. TRANSPORT INFORMATION

The official transport and risk classification designations may vary depending on packaging, product properties and transport method. As a general rule, official transport designations for this product are as follows:

CORROSIVE LIQUID, (ZINC CHLORIDE, ORGANIC PHOSPHATE), N.O.S., Category 8 (9.2), ONU1760, Packing Group III

15. REGULATORY INFORMATION

NATIONAL REGULATION, CANADA:

WHMIS:
This product has been classified in accordance with risk criteria defined in the Controlled Products Regulations, and its Material Safety Data Sheet contains all the information required by those Regulations.

WHMIS CLASSIFICATION:
E – Corrosive material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):
Each component of this product included on the Domestic Substance List (DSL) is exempt from or has been declared to conform to the New Substances Notification Regulations.

NATIONAL POLLUTANT RELEASE INVENTORY:
This product contains the following substances included in Annex I of the NPRI and are present in the indicated concentrations:

HAZARDOUS INGRÉDIENTS	CAS #	Mass %
Phosphoric acid	7664-38-2	1.0 – 5.0
Zinc chloride	7646-85-7	1.0 - 50

CANADIAN FOOD INSPECTION AGENCY:
Usage authorized under category W2

U.S. FEDERAL REGULATION:

TOXIC SUBSTANCES CONTROL ACT -TSCA:
The chemical ingredients of this product are listed in Inventory 8(b) (40 CFR 710).

16. OTHER INFORMATION

F102277

In keeping with our proper product management principles, we have evaluated the risks this product poses to humans and the environment, as well as the types of exposure. We have characterized the general risks of the product associated with recommended usage. This information should serve as a guide for your own risk management practices. We have evaluated product risks as follows:

* For humans: Slight

* For the environment: Average

Any usage not conforming to our recommendations may affect the risk characterization. Our technical representatives will help you to determine if your application of the product conforms to our recommendations. Together, we can implement an efficient risk management process.

The product must be used in applications conforming to the health and safety information contained in this MSDS. Anyone handling this product must be informed about the necessary precautions to take and must have ready access to that information for reference. For any other usage, exposure must be evaluated to facilitate material-handling practices and training programs best ensuring workplace safety. For further information, please contact your technical representative.

Written by: Management
Publication date: 1999/07/27
Replaces: 1996/09/24

APPENDIX D

Letter from the MENV – Ambient Air Criteria

Québec

Environment Ministry

Quebec, June 12, 2001

Mr. Clément Brisson
1955 Mellon Boulevard
Jonquière, Quebec G7S 4K8

Subjet: **Air quality assessment criteria**
Spent pot lining processing plant
Ref: 3211-22-09

Sir:

Following your request dated April 17, 2001, please find enclosed a note with an initial series of ambient air quality criteria. We are awaiting an answer from our experts with regard to emissions and noise. We will inform you of their opinion as soon as we receive it.

Sincerely,

Head of Department,

(French original is signed)

Louis Germain

Encl. Note from Mr. Pierre Walsh

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Québec

Environment Ministry

NOTE

TO: Mr. Yves Grimard, Head of Department
Direction du suivi de l'état de l'environnement

FROM: Mr. Pierre Walsh

DATE: May 25, 2001

SUBJECT: Implementation of a spent pot lining processing plant in Jonquière
Your Ref: 3211-22-09
Our Ref: SAVEX-549

Enclosed you will find the criteria that will be used to assess Alcan's spent pot lining processing plant project impacts on air quality. The information requested from the promoter deals with particulate matters, NH_3, Nox, CO, SO, CO_2. Criteria for other contaminants could be required after the evaluation of the file.

1) Suspended Particulates

The pan-Canadian standard developed by the Canadian Council of Ministers of the Environment will be applied. The criterion is based on fine particulates ($PM_{2.5}$); The 98^{th} percentile value distribution cannot exceed 30 µg/m^3. The 98^{th} percentile is calculated from data recorded over a successive period of three years.

Since this significant industrial project could cause $PM_{2.5}$ to increase considerably, we request that you conduct a characterization of suspended particulate levels in the ambient air. This new source cannot cause the concentrations to increase and exceed the criteria.

2) CO_2

Total CO_2 emissions must be assessed based on the contribution of climatic warming. Due to its low toxicity, we will not apply an air quality criterion for CO_2.

3) NH_3

Two criteria are applied for NH_3. An annual maximum of 100 µg/m^3 for which the reference is RfC (reference concentration) from the US EPA and an hourly maximum of 3,200µg/m^3 based on the recommendation of the California Environmental Protection Agency.

4) Revision project of the *Regulation respecting the quality of the atmosphere*: SO_2, CO and NO_2 requirements.

	Maximum 1 Hour (µg/m^3)	Maximum 8 Hours (µg/m^3)	Maximum 24 Hours (µg/m^3)	Maximum 12 Months (µg/m^3)
NO_2	400		200	100
CO	35,000	13,000		
SO_2	900		300	60

5) SO_2 criterion over a four-minute period

For SO_2, we also request compliance with the 0.6 ppm criterion for the interval of 4 minutes. This criterion is recommended by the U.S. EPA. We will inform of the procedure applied to assess the maximums over a period of minutes when the characterization of the air emission sources will be known.

(original signed by Pierre Walsh)

PW/lm

APPENDIX E

Data and Results from Atmospheric Emission Modellings

E-1 - Topographic Table
E-2 - Building Data
E-3 - Emission Data
E-4 - Results - Particulates
E-5 - Results – NH NH3
E-6 - Wind Rose

Appendix E-1

Topographic Table

APPENDIX E-1

Topographic Data - Modelling Grid

y/x	253880	253980	254080	254180	254280	254380	254480	254580	254680	254780	254880	254980	255080	255180	255280	255380	255480
5367778	55	59	60	60	58	55	52	47	40	42	42	26	39	46	48	48	43
5367678	50	56	60	59	59	60	56	52	50	40	39	46	46	52	53	52	50
5367578	50	56	60	66	70	64	57	52	50	43	52	61	61	60	60	62	49
5367478	61	51	56	68	73	66	59	52	53	52	60	60	59	60	59	57	60
5367378	63	60	54	60	61	63	62	54	58	61	60	65	85	77	90	81	78
5367278	65	60	60	60	67	81	81	66	51	60	60	69	83	91	93	91	90
5367178	68	66	66	69	77	80	80	74	57	85	60	67	88	90	90	92	92
5367078	81	79	79	77	85	87	87	80	59	60	60	73	85	90	91	92	95
5366978	83	87	90	88	91	90	90	84	60	60	60	71	87	91	92	94	96
5366878	91	90	90	90	90	91	90	81	63	68	64	79	90	91	93	95	96
5366778	90	90	90	90	90	90	90	85	84	70	70	92	90	91	94	96	98
5366678	90	90	90	90	90	90	90	90	90	88	90	90	90	92	95	97	99
5366578	90	90	90	90	91	91	92	92	91	90	91	91	91	94	97	98	100
5366478	90	90	90	90	92	93	94	94	94	93	94	94	95	97	99	100	100
5366378	91	91	92	91	93	95	96	97	97	97	97	98	99	100	100	100	100
5366278	93	95	95	96	97	98	99	99	100	100	100	100	100	100	100	101	101
5366178	97	99	99	99	100	100	100	100	100	100	100	100	100	101	101	101	102
5366078	101	100	100	100	100	100	100	100	100	100	100	100	101	101	102	102	102
5365978	100	101	100	100	100	100	100	100	100	100	100	100	101	102	102	103	103
5365878	102	102	101	100	100	100	100	100	100	100	100	101	102	103	103	104	105
5365778	104	105	99	99	100	100	101	101	101	102	102	103	103	104	104	105	105
5365678	79	80	90	96	99	101	102	102	103	103	104	104	105	105	105	106	106
5365578	80	80	83	90	96	99	101	104	104	104	105	106	106	107	107	107	108
5365478	80	80	81	88	92	97	101	105	106	106	107	107	107	108	108	109	109
5365378	78	80	80	84	92	99	106	107	107	108	108	109	109	109	110	110	109
5365278	82	80	80	83	95	101	104	107	109	110	109	110	110	110	110	110	110
5365178	93	79	80	87	104	108	109	110	110	110	110	111	112	112	112	112	112
5365078	105	110	99	109	110	110	110	110	111	111	112	112	113	114	115	115	116
5364978	110	110	111	110	110	110	110	110	111	112	113	114	115	117	118	118	118
5364878	110	110	112	112	112	113	112	113	114	115	116	117	118	119	120	121	123
5364778	111	110	111	112	114	116	120	118	117	117	118	118	119	120	121	124	127
5364678	112	111	113	114	116	118	120	120	120	120	120	120	120	120	122	127	130
5364578	113	113	114	116	117	119	120	120	120	120	120	120	120	119	125	129	134
5364478	115	115	116	117	119	120	120	120	120	120	120	120	119	121	126	133	141
5364378	117	117	117	118	120	120	120	120	120	120	120	119	121	124	127	130	138
5364278	118	118	118	119	120	120	120	120	120	120	120	120	122	125	132	140	140
5364178	120	119	119	120	120	120	120	120	120	120	120	122	124	128	128	140	140
5364078	120	119	120	120	120	120	120	120	120	121	122	124	126	128	129	133	138
5363978	120	120	121	122	121	121	121	120	121	122	124	125	127	129	130	132	133
5363878	120	120	120	121	122	122	123	123	123	124	125	127	128	130	130	130	130
5363778	120	120	121	122	123	124	125	125	125	126	127	128	129	130	130	130	130
5363678	120	120	122	123	125	126	127	128	128	128	128	129	130	130	130	130	130
5363578	120	120	123	126	128	128	130	130	129	129	129	130	130	130	130	130	130

APPENDIX E-1

Topographic Data - Modelling Grid

y/x	255580	255680	255780	255880	255980	256080	256180	256280	256380	256480	256580	256680	256780	256880	256980	257080	257180
5367778	110	110	110	10	8	6	7	8	6	9	9	10	10	8	10	10	9
5367678	32	110	20	26	27	21	9	7	6	9	9	9	7	8	10	10	9
5367578	47	25	30	47	38	29	24	17	8	6	7	9	6	7	10	10	9
5367478	58	43	49	56	48	42	31	26	24	11	10	10	8	8	10	7	9
5367378	60	54	63	73	66	47	42	36	29	26	20	19	21	13	10	9	9
5367278	80	60	74	82	67	60	55	54	53	38	44	42	40	34	40	30	10
5367178	92	71	88	87	79	60	60	60	53	51	43	45	42	39	46	44	26
5367078	98	91	94	93	80	60	60	60	60	54	43	59	56	47	58	61	30
5366978	99	98	96	99	84	60	60	60	60	61	48	64	70	61	60	57	40
5366878	99	99	100	98	91	80	57	75	61	61	59	60	68	66	62	62	50
5366778	99	100	100	99	102	100	92	93	71	60	60	67	72	72	67	60	62
5366678	99	100	100	100	100	100	100	93	76	60	60	67	76	77	70	72	70
5366578	100	100	100	100	100	100	98	92	92	79	79	75	89	83	80	71	70
5366478	100	100	100	100	100	100	99	97	94	90	87	90	91	88	84	80	74
5366378	100	100	100	100	100	100	100	100	98	94	92	96	97	96	97	87	80
5366278	100	100	100	101	101	101	101	100	100	98	98	101	105	108	101	85	80
5366178	101	100	100	102	102	103	102	101	100	100	101	107	111	108	91	80	85
5366078	102	100	102	103	103	103	102	102	102	102	104	108	110	103	90	80	89
5365978	102	102	103	104	104	104	103	104	103	103	106	107	108	98	88	90	90
5365878	103	103	104	105	105	105	105	104	105	104	107	105	107	102	103	99	91
5365778	105	104	106	106	106	106	106	105	106	108	106	107	108	107	106	103	91
5365678	106	105	107	107	107	107	107	106	107	109	109	108	109	109	108	106	104
5365578	107	106	107	108	108	108	108	108	110	110	112	109	110	110	110	110	109
5365478	108	107	109	110	109	109	109	109	109	112	114	114	110	110	110	110	110
5365378	109	108	109	110	110	110	110	110	111	112	116	120	117	112	112	114	114
5365278	110	109	113	113	110	110	110	110	110	111	115	119	120	120	112	120	119
5365178	114	120	120	118	113	111	110	110	110	110	113	115	121	119	121	120	119
5365078	119	123	121	120	117	114	112	113	112	113	114	116	119	121	120	120	120
5364978	124	131	128	124	120	118	116	115	115	115	116	117	118	121	121	121	120
5364878	128	131	130	126	124	122	119	118	118	117	118	118	118	122	121	121	120
5364778	133	134	130	129	127	125	123	121	120	120	120	120	120	120	121	121	120
5364678	137	140	130	130	129	128	126	124	122	122	121	121	120	121	122	121	120
5364578	140	141	133	130	130	130	128	126	125	124	122	122	121	121	122	121	121
5364478	141	138	129	130	130	130	129	127	126	125	127	126	125	122	122	122	121
5364378	140	136	130	130	130	130	130	128	127	126	127	127	126	125	125	124	122
5364278	136	130	130	130	130	130	129	129	128	128	128	127	127	126	126	125	124
5364178	137	129	130	130	130	130	129	128	129	128	128	128	127	127	126	126	126
5364078	135	130	130	130	130	130	129	129	129	128	128	128	128	127	127	127	128
5363978	131	130	130	130	130	130	130	129	130	130	130	130	130	130	130	130	130
5363878	131	130	130	130	130	130	130	136	129	127	127	127	130	130	130	130	130
5363778	130	130	130	130	130	130	133	140	128	126	130	130	130	130	130	130	130
5363678	130	130	130	130	130	130	130	129	130	130	130	130	130	130	130	130	130
5363578	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130

APPENDIX E-1

Topographic Data - Modelling Grid

y/x	257280	257380	257480	257580	257680	257780	257880	257980	258080
5367778	9	10	10	10	10	10	10	10	10
5367678	8	10	9	10	10	10	10	10	10
5367578	8	9	9	10	10	10	10	10	10
5367478	8	8	10	10	10	10	10	10	10
5367378	6	9	10	10	10	10	10	10	10
5367278	13	7	10	10	10	10	10	10	10
5367178	33	10	10	10	10	10	10	10	10
5367078	41	19	10	10	10	10	10	10	10
5366978	49	9	8	8	10	10	10	10	10
5366878	58	45	35	41	26	8	10	10	10
5366778	60	60	59	50	49	20	10	10	10
5366678	60	63	63	58	51	31	14	10	19
5366578	69	70	70	65	63	65	64	60	58
5366478	72	73	72	70	69	69	67	60	63
5366378	78	77	76	75	74	73	72	72	70
5366278	80	80	80	80	80	79	77	77	74
5366178	89	83	82	86	84	80	81	80	78
5366078	90	90	91	91	90	85	84	86	86
5365978	90	91	90	91	90	90	90	90	90
5365878	90	90	90	90	91	98	98	97	97
5365778	95	94	93	91	95	110	106	109	105
5365678	100	99	98	98	98	103	108	111	111
5365578	106	103	103	100	108	118	121	118	115
5365478	112	110	110	111	120	133	138	132	114
5365378	115	114	115	118	121	134	138	127	110
5365278	117	117	118	119	121	130	133	119	111
5365178	119	120	119	120	120	117	115	114	110
5365078	120	120	120	120	119	115	112	110	110
5364978	120	120	120	120	118	115	112	110	110
5364878	120	120	120	120	117	115	112	110	110
5364778	120	120	120	120	119	117	115	114	115
5364678	120	120	120	120	120	119	118	119	121
5364578	120	120	120	120	120	120	120	124	131
5364478	121	120	120	120	120	120	124	130	131
5364378	121	121	120	120	122	126	129	132	135
5364278	124	123	121	121	125	130	131	133	139
5364178	126	126	125	125	128	130	130	132	135
5364078	128	129	129	128	129	130	130	130	130
5363978	129	130	130	130	130	130	130	130	130
5363878	130	130	130	130	130	130	130	130	130
5363778	130	130	130	130	130	130	130	130	130
5363678	130	130	130	130	130	130	130	130	130
5363578	130	130	130	130	130	130	130	130	130

Appendix E-2

Building Data

BUILDING PROFILE INPUT PROGRAM (BPIP)
Dated 95086
BREEZE WAKE/BPIP-32
IBM-PC VERSION (1.22)

RUN INFORMATION
****
Building Data File:

Source Info. File:

BPIP Run File: C:\TRINITY\ALCAN\ALC_P00.BPI

Output List File: C:\TRINITY\ALCAN\ALC_P00.BPO

Output Wake File: C:\TRINITY\ALCAN\ALC_P00.WAK
Output EPA File: C:\TRINITY\ALCAN\ALC_P00.EPA

Run began on: 7/06/2001 at 11:28:58
****

Usine de brasques

Plant North: 0.00

Calculations for the ISCST2 model with 36 radial directions.

Input Buildings: 11

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
brasque	1	111.50	1	1	12.00	8	255955.500	5365775.000
							256056.000	5365734.000
							256044.000	5365703.000
							256064.000	5365695.000
							256057.000	5365679.000
							255957.000	5365719.000
							255962.500	5365734.000
							255942.000	5365742.000

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
310	2	111.50	1	7	23.50	8	255938.000	5365699.000
							255975.000	5365705.000
							255988.000	5365700.000
							255989.000	5365700.000
							255989.000	5365693.000
							255977.000	5365691.000
							255980.000	5365675.000
							255941.000	5365669.000

------ Building ------	Tier	Tier	Tier	# of	Corner coordinates

ID	#	Elev. (m)	#	Ref.	hgt	corners	X (m)	Y (m)
304-8-9	3	111.50	1	13	21.50	4		
							255730.000	5365770.000
							255889.000	5365793.000
							255911.000	5365646.000
							255748.000	5365627.000

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
318-19-	4	111.50	1	19	18.00	4		
							255913.000	5365520.000
							255899.000	5365619.000
							256178.000	5365656.000
							256194.000	5365557.000

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
305	5	111.50	1	25	38.00	6		
							255894.000	5365661.000
							255892.000	5365680.000
							255909.000	5365682.000
							255908.000	5365691.000
							255917.000	5365692.000
							255921.000	5365665.000

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
608	6	111.50	1	31	10.00	8		
							256090.000	5365750.000
							256085.000	5365785.000
							256115.000	5365790.000
							256117.000	5365774.000
							256154.000	5365778.000
							256155.000	5365766.000
							256119.000	5365762.000
							256120.000	5365753.000

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
brasque4	7	111.50	1	37	24.00	4		
							256056.000	5365734.000
							256049.500	5365736.500
							256045.400	5365726.000
							256052.000	5365723.500

------ Building ------ ID	#	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
brasque2	8	111.50	1	43	16.00	6		
							255955.400	5365775.000
							256001.800	5365756.000
							255982.500	5365708.500

							Corner coordinates	
							X	Y
							255957.000	5365719.000
							255962.600	5365734.000
							255942.000	5365742.000

ID	Building #	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
brasque3	9	111.50	1	49	18.00	4		
							256001.800	5365756.000
							256015.900	5365750.500
							255996.000	5365703.000
							255982.500	5365708.500

ID	Building #	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
B 426	10	111.50	1	55	16.80	4		
							256284.000	5365715.000
							256283.000	5365725.000
							256257.000	5365721.000
							256258.000	5365711.000

ID	Building #	Elev. (m)	Tier #	Tier Ref.	Tier hgt	# of corners	Corner coordinates X (m)	Y (m)
brasque5	11	111.50	1	61	20.00	4		
							255957.000	5365719.000
							255960.000	5365726.000
							255986.000	5365716.000
							255983.000	5365709.000

Input Stacks: 17

Stack #	Stack Name	Stack Height	Stack Elev.	Stack coordinates X (m)	Y (m)
1	210SX02	24.00	111.50	255998.000	5365750.000
2	210SX03	24.00	111.50	255976.000	5365746.000
3	210SX04	30.00	111.50	255980.000	5365712.000
4	320SX01	30.00	111.50	256004.000	5365736.000
5	330SX01	27.00	111.50	256051.000	5365734.000
6	380SX03	27.00	111.50	256000.000	5365728.000
7	210FA04	16.20	111.50	255988.000	5365751.000
8	210FA05	16.20	111.50	255981.000	5365732.000
9	210FA06	20.20	111.50	255971.000	5365717.000
10	210FA07	20.20	111.50	255979.000	5365715.000
11	300FA02	18.20	111.50	256006.000	5365748.000
12	300FA03	18.20	111.50	256000.000	5365733.000
13	300FA04	18.20	111.50	255995.000	5365720.000
14	300FA05	12.20	111.50	256022.000	5365742.000
15	300FA06	12.20	111.50	256016.000	5365729.000
16	300FA07	12.20	111.50	256009.000	5365712.000
17	CHAUDIER	41.00	111.50	256268.000	5365736.000

Stack number: 1 Name: 210SX02

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 31.55 GEP: 85.33

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	31.55	85.33	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	21.50	178.43	53.75	S-S	(13)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	18.00	53.07	45.00	S-S	(49)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	23.50	51.00	58.75	S-S	(7)
190	21.50	268.44	53.75	S-S	(25 7 13)
200	21.50	269.72	53.75	S-S	(25 7 13)
210	21.50	264.01	53.75	S-S	(25 7 13)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	49.86	58.75	S-S	(7 25)
250	21.50	178.43	53.75	S-S	(25 7 13)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)

300	18.00	53.07	45.00	S-S	(49)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 2 Name: 210SX03

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 32.41 GEP: 86.62

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	38.00	32.41	86.62	S-S	(25)
40	38.00	31.86	85.79	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	21.50	178.43	53.75	S-S	(13)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	23.50	57.07	58.75	S-S	(7)
160	23.50	55.71	58.75	S-S	(7)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)

190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	21.50	207.27	53.75	S-S	(25 7 13)
250	21.50	178.43	53.75	S-S	(25 7 13)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(13 25)
290	21.50	204.21	53.75	S-S	(13)
300	21.50	214.26	53.75	S-S	(13)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	23.50	57.07	58.75	S-S	(7)
340	23.50	55.71	58.75	S-S	(7)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 3 Name: 210SX04

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.79 GEP: 82.69

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	29.79	82.69	S-S	(25)
50	38.00	29.79	82.69	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)

80	38.00	27.86	79.79	S-S	(25)
90	23.50	36.00	58.75	S-S	(7)
100	23.50	41.36	58.75	S-S	(7)
110	23.50	45.55	58.75	S-S	(7)
120	23.50	50.85	58.75	S-S	(7)
130	23.50	54.60	58.75	S-S	(7)
140	23.50	56.70	58.75	S-S	(7)
150	23.50	57.07	58.75	S-S	(7)
160	23.50	55.71	58.75	S-S	(7)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	38.00	29.79	82.69	S-S	(25)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	23.50	30.93	58.75	S-S	(7)
270	23.50	36.00	58.75	S-S	(7)
280	23.50	41.36	58.75	S-S	(7)
290	23.50	45.55	58.75	S-S	(7)
300	23.50	50.85	58.75	S-S	(7)
310	23.50	54.60	58.75	S-S	(7)
320	23.50	56.70	58.75	S-S	(7)
330	23.50	57.07	58.75	S-S	(7)
340	23.50	55.71	58.75	S-S	(7)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 4 Name: 320SX01

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 30.24 GEP: 83.36

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	18.00	53.64	45.00	H-S	(49)
140	18.00	52.58	45.00	H-S	(49)
150	18.00	49.93	45.00	H-S	(49)
160	18.00	45.75	45.00	H-S	(49)
170	18.00	40.19	45.00	H-S	(49)
180	18.00	33.40	45.00	H-S	(49)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	39.66	58.75	S-S	(7 25)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)

280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(13)
310	18.00	53.64	45.00	H-S	(49)
320	18.00	52.58	45.00	H-S	(49)
330	18.00	49.93	45.00	H-S	(49)
340	18.00	45.75	45.00	H-S	(49)
350	18.00	40.19	45.00	H-S	(49)
360	18.00	33.40	45.00	H-S	(49)

Stack number: 5 Name: 330SX01

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.07 GEP: 81.60

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	24.00	9.05	37.57	S-S	(37)
20	24.00	7.22	34.84	S-S	(37)
30	24.00	8.67	37.00	S-S	(37)
40	24.00	10.27	39.41	S-S	(37)
50	23.50	45.38	58.75	S-S	(7)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(25 7 13)
90	21.50	166.00	53.75	S-S	(25 7 13)
100	21.50	187.96	53.75	S-S	(25 7 13)
110	21.50	204.21	53.75	S-S	(25 7 13)
120	18.00	53.07	45.00	S-S	(49)
130	24.00	12.94	43.41	S-S	(37)
140	24.00	13.26	43.89	S-S	(37)
150	24.00	13.18	43.77	S-S	(37)
160	24.00	12.70	43.05	S-S	(37)

170	24.00	11.83	41.74	S-S	(37)
180	24.00	10.60	39.90	S-S	(37)
190	24.00	9.05	37.57	S-S	(37)
200	24.00	7.22	34.84	S-S	(37)
210	24.00	8.67	37.00	S-S	(37)
220	24.00	10.27	39.41	S-S	(37)
230	18.00	51.92	45.00	S-S	(7 49 61)
240	18.00	43.00	45.00	S-S	(49)
250	18.00	47.82	45.00	S-S	(49)
260	18.00	51.19	45.00	S-S	(49)
270	18.00	53.00	45.00	S-S	(49)
280	24.00	12.37	42.55	S-S	(37)
290	24.00	11.36	41.04	S-S	(37)
300	18.00	53.07	45.00	S-S	(49)
310	24.00	12.94	43.41	S-S	(37)
320	24.00	13.26	43.89	S-S	(37)
330	24.00	13.18	43.77	S-S	(37)
340	24.00	12.70	43.05	S-S	(37)
350	24.00	11.83	41.74	S-S	(37)
360	24.00	10.60	39.90	S-S	(37)

Stack number: 6 Name: 38OSX03

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.79 GEP: 82.69

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	29.79	82.69	S-S	(25)

60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(13)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 7 Name: 210FA04

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 32.09 GEP: 86.13

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	38.00	32.09	86.13	S-S	(25)
40	38.00	31.86	85.79	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	21.50	178.43	53.75	S-S	(13)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	18.00	53.07	45.00	S-S	(49)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	21.50	268.44	53.75	S-S	(25 7 13)
200	21.50	269.72	53.75	S-S	(25 7 13)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	21.50	207.27	53.75	S-S	(25 7 13)
250	21.50	178.43	53.75	S-S	(25 7 13)
260	21.50	153.55	53.75	S-S	(25 7 13)

270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(13)
300	18.00	53.07	45.00	S-S	(49)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 8 Name: 210FA05

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 31.59 GEP: 85.38

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	31.59	85.38	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	20.00	64.93	50.00	S-S	(7 61)
140	20.00	20.29	50.00	S-S	(61)
150	23.50	57.07	58.75	S-S	(7)

160	23.50	55.71	58.75	S-S	(7)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	21.50	178.43	53.75	S-S	(25 7 13)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(13)
300	21.50	214.26	53.75	S-S	(13)
310	20.00	64.93	50.00	S-S	(7 61)
320	20.00	20.29	50.00	S-S	(61)
330	23.50	57.07	58.75	S-S	(7)
340	23.50	55.71	58.75	S-S	(7)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 9 Name: 210FA06

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 31.28 GEP: 84.92

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	31.28	84.92	S-S	(25)

50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	23.50	41.36	58.75	S-S	(7)
110	23.50	45.55	58.75	S-S	(7)
120	23.50	50.85	58.75	S-S	(7)
130	23.50	54.60	58.75	S-S	(7)
140	23.50	56.70	58.75	S-S	(7)
150	23.50	57.07	58.75	S-S	(7)
160	23.50	55.71	58.75	S-S	(7)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	38.00	31.28	84.92	S-S	(25)
230	38.00	30.13	83.20	S-S	(25)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	23.50	41.36	58.75	S-S	(7)
290	23.50	45.55	58.75	S-S	(7)
300	23.50	50.85	58.75	S-S	(7)
310	23.50	54.60	58.75	S-S	(7)
320	23.50	56.70	58.75	S-S	(7)
330	23.50	57.07	58.75	S-S	(7)
340	23.50	55.71	58.75	S-S	(7)
350	23.50	52.65	58.75	S-S	(7)

360	23.50	51.00	58.75	S-S	(7)

Stack number: 10 Name: 210FA07

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 30.29 GEP: 83.44

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	30.29	83.44	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	38.00	27.86	79.79	S-S	(25)
90	23.50	36.00	58.75	S-S	(7)
100	23.50	41.36	58.75	S-S	(7)
110	23.50	45.55	58.75	S-S	(7)
120	23.50	50.85	58.75	S-S	(7)
130	23.50	54.60	58.75	S-S	(7)
140	23.50	56.70	58.75	S-S	(7)
150	23.50	57.07	58.75	S-S	(7)
160	23.50	55.71	58.75	S-S	(7)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	38.00	30.29	83.44	S-S	(25)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)

250	23.50	36.92	58.75	S-S	(7)
260	23.50	30.93	58.75	S-S	(7)
270	23.50	36.00	58.75	S-S	(7)
280	23.50	41.36	58.75	S-S	(7)
290	23.50	45.55	58.75	S-S	(7)
300	23.50	50.85	58.75	S-S	(7)
310	23.50	54.60	58.75	S-S	(7)
320	23.50	56.70	58.75	S-S	(7)
330	23.50	57.07	58.75	S-S	(7)
340	23.50	55.71	58.75	S-S	(7)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 11 Name: 300FA02

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 30.98 GEP: 84.47

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	38.00	30.98	84.47	S-S	(25)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	21.50	178.43	53.75	S-S	(13 25)
80	21.50	153.55	53.75	S-S	(13 25)
90	21.50	166.00	53.75	S-S	(13 25)
100	21.50	187.96	53.75	S-S	(13 25)
110	21.50	204.21	53.75	S-S	(13 25)
120	18.00	53.07	45.00	S-S	(49)
130	18.00	53.64	45.00	S-S	(49)

140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	18.00	33.40	45.00	S-S	(49)
190	21.50	268.44	53.75	S-S	(25 7 13)
200	21.50	269.72	53.75	S-S	(25 7 13)
210	21.50	264.01	53.75	S-S	(25 7 13)
220	21.50	218.36	53.75	S-S	(13 25)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	21.50	178.43	53.75	S-S	(25 7 13)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	18.00	53.07	45.00	S-S	(49)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	18.00	33.40	45.00	S-S	(49)

Stack number: 12 Name: 300FA03

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 30.24 GEP: 83.36

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)

30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	30.13	83.20	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(13)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)

350	18.00	40.19	45.00	S-S	(49)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 13 Name: 300FA04

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.31 GEP: 81.96

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	23.50	51.27	58.75	S-S	(7)
20	23.50	49.98	58.75	S-S	(7)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	29.31	81.96	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	38.00	27.86	79.79	S-S	(25)
90	21.50	166.00	53.75	S-S	(13)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	20.00	64.93	50.00	S-S	(7 61)
140	20.00	20.29	50.00	S-S	(61)
150	20.00	23.61	50.00	S-S	(61)
160	20.00	26.23	50.00	S-S	(61)
170	23.50	52.65	58.75	S-S	(7)
180	23.50	51.00	58.75	S-S	(7)
190	23.50	51.27	58.75	S-S	(7)
200	23.50	49.98	58.75	S-S	(7)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)

240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	23.50	30.93	58.75	S-S	(7)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(13)
310	20.00	64.93	50.00	S-S	(7 61)
320	20.00	20.29	50.00	S-S	(61)
330	20.00	23.61	50.00	S-S	(61)
340	20.00	26.23	50.00	S-S	(61)
350	23.50	52.65	58.75	S-S	(7)
360	23.50	51.00	58.75	S-S	(7)

Stack number: 14 Name: 300FA05

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.49 GEP: 82.24

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	18.00	25.60	45.00	S-S	(49)
20	18.00	55.59	45.00	S-S	(7 49 61)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	29.49	82.24	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(25 7 13)
90	21.50	166.00	53.75	S-S	(25 7 13)
100	21.50	187.96	53.75	S-S	(25 7 13)
110	21.50	204.21	53.75	S-S	(25 7 13)
120	18.00	53.07	45.00	S-S	(49)

130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	18.00	33.40	45.00	S-S	(49)
190	18.00	25.60	45.00	S-S	(49)
200	18.00	55.59	45.00	S-S	(7 49 61)
210	21.50	264.01	53.75	S-S	(25 7 13)
220	18.00	29.62	45.00	S-S	(49)
230	18.00	36.87	45.00	S-S	(49)
240	18.00	43.00	45.00	S-S	(49)
250	23.50	36.92	58.75	S-S	(7)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	18.00	53.07	45.00	S-S	(49)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	18.00	33.40	45.00	S-S	(49)

Stack number: 15 Name: 300FA06

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.07 GEP: 81.60

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	18.00	25.60	45.00	S-S	(49)

20	18.00	55.59	45.00	S-S	(7 49 61)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	38.00	29.07	81.60	S-S	(25)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	21.50	153.55	53.75	S-S	(13 25)
90	21.50	166.00	53.75	S-S	(13 25)
100	21.50	187.96	53.75	S-S	(13 25)
110	21.50	204.21	53.75	S-S	(13 25)
120	21.50	214.26	53.75	S-S	(13 25)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	18.00	33.40	45.00	S-S	(49)
190	18.00	25.60	45.00	S-S	(49)
200	18.00	55.59	45.00	S-S	(7 49 61)
210	23.50	48.37	58.75	S-S	(7)
220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	21.50	153.55	53.75	S-S	(25 7 13)
270	21.50	166.00	53.75	S-S	(25 7 13)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(25 7 13)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)

330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	18.00	33.40	45.00	S-S	(49)

Stack number: 16 Name: 300FA07

Structure producing the greatest GEP stack height within 5L: (25)

Height: 38.00 Width: 29.07 GEP: 81.60

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	18.00	25.60	45.00	S-S	(49)
20	18.00	55.59	45.00	S-S	(19)
30	23.50	48.37	58.75	S-S	(7)
40	23.50	47.60	58.75	S-S	(7)
50	23.50	45.38	58.75	S-S	(7)
60	38.00	29.02	81.52	S-S	(25)
70	38.00	28.88	81.32	S-S	(25)
80	38.00	27.86	79.79	S-S	(25)
90	23.50	36.00	58.75	S-S	(7)
100	21.50	187.96	53.75	S-S	(13)
110	21.50	204.21	53.75	S-S	(13)
120	21.50	214.26	53.75	S-S	(13)
130	18.00	53.64	45.00	S-S	(49)
140	18.00	52.58	45.00	S-S	(49)
150	18.00	49.93	45.00	S-S	(49)
160	18.00	45.75	45.00	S-S	(49)
170	18.00	40.19	45.00	S-S	(49)
180	18.00	33.40	45.00	S-S	(49)
190	18.00	25.60	45.00	S-S	(49)
200	18.00	55.59	45.00	S-S	(19)
210	23.50	48.37	58.75	S-S	(7)

220	23.50	47.60	58.75	S-S	(7)
230	23.50	45.38	58.75	S-S	(7)
240	23.50	41.78	58.75	S-S	(7)
250	23.50	36.92	58.75	S-S	(7)
260	23.50	30.93	58.75	S-S	(7)
270	23.50	36.00	58.75	S-S	(7)
280	21.50	187.96	53.75	S-S	(25 7 13)
290	21.50	204.21	53.75	S-S	(25 7 13)
300	21.50	214.26	53.75	S-S	(25 7 13)
310	18.00	53.64	45.00	S-S	(49)
320	18.00	52.58	45.00	S-S	(49)
330	18.00	49.93	45.00	S-S	(49)
340	18.00	45.75	45.00	S-S	(49)
350	18.00	40.19	45.00	S-S	(49)
360	18.00	33.40	45.00	S-S	(49)

Stack number: 17 Name: CHAUDIER

Structure producing the greatest GEP stack height within 5L: (55)

Height: 16.80 Width: 25.32 GEP: 42.00

Direction Specific Building Downwash

Degree	Height	Width	GEP	Method	Dominant Structure
10	16.80	27.63	42.00	H-S	(55)
20	16.80	27.42	42.00	H-S	(55)
30	16.80	26.38	42.00	H-S	(55)
40	16.80	24.54	42.00	H-S	(55)
50	16.80	21.95	42.00	H-S	(55)
60	16.80	18.70	42.00	H-S	(55)
70	0.00	0.00	0.00	ND	
80	0.00	0.00	0.00	ND	
90	0.00	0.00	0.00	ND	
100	16.80	18.13	42.00	H-S	(55)

110	16.80	21.71	42.00	H-S	(55)
120	16.80	24.62	42.00	H-S	(55)
130	16.80	26.79	42.00	H-S	(55)
140	16.80	28.15	42.00	H-S	(55)
150	16.80	28.65	42.00	H-S	(55)
160	16.80	28.28	42.00	H-S	(55)
170	16.80	27.05	42.00	H-S	(55)
180	16.80	27.00	42.00	H-S	(55)
190	16.80	27.63	42.00	H-S	(55)
200	16.80	27.42	42.00	H-S	(55)
210	16.80	26.38	42.00	H-S	(55)
220	16.80	24.54	42.00	H-S	(55)
230	16.80	21.95	42.00	H-S	(55)
240	16.80	18.70	42.00	H-S	(55)
250	0.00	0.00	0.00	ND	
260	0.00	0.00	0.00	ND	
270	0.00	0.00	0.00	ND	
280	16.80	18.13	42.00	H-S	(55)
290	16.80	21.71	42.00	H-S	(55)
300	16.80	24.62	42.00	H-S	(55)
310	16.80	26.79	42.00	H-S	(55)
320	16.80	28.15	42.00	H-S	(55)
330	16.80	28.65	42.00	H-S	(55)
340	16.80	28.28	42.00	H-S	(55)
350	16.80	27.05	42.00	H-S	(55)
360	16.80	27.00	42.00	H-S	(55)

****

Run ended on: 7/06/2001 at 11:29:16
****

Appendix E 3

Emission Data

Appendix E-3

Source Data - Ammonia

	X (m)	Y (m)	Elevation (m)	Contaminant Output (g/s)	Source Height (m)	Temperature (K)	Gas Release Speed (m/s)	Chimney Diameter (m)
210SX02	255998	5365750	111,5	0,0442	24	293,15	16,7	1,2
210SX03	255976	5365746	111,5	0,4417	24	293,15	16,6	0,85
210SX04	255980	5365712	111,5	0,0442	30	293,15	16,6	0,85
320SX01	256004	5365736	111,5	3,7111	30	360,15	17,7	1
330SX01	256051	5365734	111,5	0,0667	27	453,15	14,1	0,05
380SX03	256000	5365728	111,5	0,328	21,66	1089	1,855	0,305

Appendix E-3

Source Data - Dust

	X (m)	Y (m)	Elevation (m)	Contaminant Output (g/s)	Source Height (m)	Temperature (K)	Gas Release Speed (m/s)	Chimney Diameter (m)
210SX02	255998	5365750	111,5	0,0377	24	293,15	16,7	1,2
210SX03	255976	5365746	111,5	0,0188	24	293,15	16,6	0,85
210SX04	255980	5365712	111,5	0,0188	30	293,15	16,6	0,85
210FA04	255988	5365751	111,5	0,0076	16,2	293,15	1,9	2,25
210FA05	255981	5365732	111,5	0,0076	16,2	293,15	1,9	2,25
210FA06	255971	5365717	111,5	0,0076	20,2	293,15	1,9	2,25
210FA07	255979	5365715	111,5	0,0076	20,2	293,15	1,9	2,25
300FA02	256006	5365748	111,5	0,0036	18,2	293,15	1,9	2,25
300FA03	256000	5365733	111,5	0,0036	18,2	293,15	1,9	2,25
300FA04	255995	5365720	111,5	0,0036	18,2	293,15	1,9	2,25
300FA05	256022	5365742	111,5	0,0036	12,2	293,15	1,9	2,25
300FA06	256016	5365729	111,5	0,0036	12,2	293,15	1,9	2,25
300FA07	256009	5365712	111,5	0,0036	12,2	293,15	1,9	2,25
CHAUDIER	256268	5365736	111,5	0,2444	41	473,15	14	1,82

Appendix E-3

Source Data - CO

	X (m)	Y (m)	Elevation (m)	Contaminant Output (g/s)	Source Height (m)	Temperature (K)	Gas Release Speed (m/s)	Chimney Diameter (m)
CHAUDIER	256268	5365736	111,5	3,7	41	473,15	14	1,82

Source Data - SO_2

	X (m)	Y (m)	Elevation (m)	Contaminant Output (g/s)	Source Height (m)	Temperature (K)	Gas Release Speed (m/s)	Chimney Diameter (m)
CHAUDIER	256268	5365736	111,5	0,024	41	473,15	14	1,82

Source Data - NO_2

	X (m)	Y (m)	Elevation (m)	Contaminant Output (g/s)	Source Height (m)	Temperature (K)	Gas Release Speed (m/s)	Chimney Diameter (m)
CHAUDIER	256268	5365736	111,5	1	41	473,15	14	1,82

Appendix E-4

Results – Particulates

APPENDIX E-4

Table E-4.1: Fifty (50) Highest Results for Particulate Concentration on an Annual Basis for 1996

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	0,135	254780	5366178	0,19%
2	0,134	254780	5366078	0,19%
3	0,126	254680	5366178	0,18%
4	0,125	254780	5365978	0,18%
5	0,122	254680	5366078	0,17%
6	0,120	254839	5366274	0,17%
7	0,120	254780	5366278	0,17%
8	0,119	254680	5366278	0,17%
9	0,117	254580	5366178	0,17%
10	0,117	254850	5365900	0,17%
11	0,113	254680	5365978	0,16%
12	0,112	254580	5366278	0,16%
13	0,112	254580	5366078	0,16%
14	0,108	254480	5366178	0,15%
15	0,107	254480	5366278	0,15%
16	0,103	254480	5366078	0,15%
17	0,102	254580	5365978	0,15%
18	0,100	254380	5366178	0,14%
19	0,099	254380	5366278	0,14%
20	0,096	254380	5366078	0,14%
21	0,096	254580	5366378	0,14%
22	0,094	254480	5366378	0,13%
23	0,093	254280	5366178	0,13%
24	0,093	254680	5366378	0,13%
25	0,093	254480	5365978	0,13%
26	0,092	254280	5366278	0,13%
27	0,091	254680	5365878	0,13%
28	0,090	254380	5366378	0,13%
29	0,089	254280	5366078	0,13%
30	0,086	254180	5366178	0,12%
31	0,085	254380	5365978	0,12%
32	0,084	254180	5366278	0,12%
33	0,084	254280	5366378	0,12%
34	0,083	254180	5366078	0,12%
35	0,082	254580	5365878	0,12%
36	0,082	255580	5365178	0,12%
37	0,081	254080	5366178	0,12%
38	0,081	255550	5365400	0,12%
39	0,078	254080	5366278	0,11%
40	0,078	254280	5365978	0,11%
41	0,077	254180	5366378	0,11%
42	0,077	254380	5366478	0,11%
43	0,077	254080	5366078	0,11%
44	0,076	254480	5366478	0,11%
45	0,076	253980	5366178	0,11%
46	0,076	254280	5366478	0,11%
47	0,075	254080	5366378	0,11%
48	0,075	254480	5365878	0,11%
49	0,075	255580	5365078	0,11%
50	0,073	253980	5366278	0,10%

APPENDIX E-4

Table E-4.2: Fifty (50) Highest Results for Particulate Concentration on an Annual Basis for 1997

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	0,131	254780	5366078	0,19%
2	0,128	254780	5365978	0,18%
3	0,125	254850	5365900	0,18%
4	0,122	254680	5366078	0,17%
5	0,119	254780	5366178	0,17%
6	0,117	254680	5366178	0,17%
7	0,117	254680	5365978	0,17%
8	0,113	254580	5366078	0,16%
9	0,112	254580	5366178	0,16%
10	0,107	254580	5365978	0,15%
11	0,106	254480	5366178	0,15%
12	0,105	254480	5366078	0,15%
13	0,100	254380	5366178	0,14%
14	0,100	254680	5365878	0,14%
15	0,099	254839	5366274	0,14%
16	0,098	254380	5366078	0,14%
17	0,098	254480	5365978	0,14%
18	0,098	254780	5366278	0,14%
19	0,098	254680	5366278	0,14%
20	0,096	254580	5366278	0,14%
21	0,096	254480	5366278	0,14%
22	0,094	254280	5366178	0,13%
23	0,092	254380	5366278	0,13%
24	0,092	255550	5365400	0,13%
25	0,091	254280	5366078	0,13%
26	0,090	254380	5365978	0,13%
27	0,090	254580	5365878	0,13%
28	0,087	254280	5366278	0,12%
29	0,087	254180	5366178	0,12%
30	0,085	254180	5366078	0,12%
31	0,084	254280	5365978	0,12%
32	0,082	254080	5366178	0,12%
33	0,082	254480	5365878	0,12%
34	0,082	254180	5366278	0,12%
35	0,080	254080	5366078	0,11%
36	0,078	254180	5365978	0,11%
37	0,078	254680	5366378	0,11%
38	0,078	253980	5366178	0,11%
39	0,078	254580	5366378	0,11%
40	0,077	254080	5366278	0,11%
41	0,076	254480	5366378	0,11%
42	0,075	253980	5366078	0,11%
43	0,075	254380	5365878	0,11%
44	0,074	254380	5366378	0,11%
45	0,074	255580	5365178	0,11%
46	0,073	253980	5366278	0,10%
47	0,073	254080	5365978	0,10%
48	0,073	255575	5364525	0,10%
49	0,073	255480	5365278	0,10%
50	0,072	253880	5366078	0,10%

APPENDIX E-4

Table E-4.3: Fifty (50) Highest Results for Particulate Concentration on an Annual Basis for 1998

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	0,118	254850	5365900	0,17%
2	0,115	254780	5365978	0,16%
3	0,111	254780	5366078	0,16%
4	0,108	254780	5366178	0,15%
5	0,106	254680	5365978	0,15%
6	0,104	254680	5366078	0,15%
7	0,101	254680	5366178	0,14%
8	0,101	254680	5365878	0,14%
9	0,098	254580	5365978	0,14%
10	0,098	254580	5366078	0,14%
11	0,097	254839	5366274	0,14%
12	0,096	254325	5365800	0,14%
13	0,096	255550	5365400	0,14%
14	0,096	254780	5366278	0,14%
15	0,095	254580	5366178	0,14%
16	0,095	254680	5366278	0,14%
17	0,094	254580	5365878	0,13%
18	0,093	254480	5366078	0,13%
19	0,091	254480	5365978	0,13%
20	0,090	254480	5366178	0,13%
21	0,089	254580	5366278	0,13%
22	0,088	255580	5365178	0,13%
23	0,087	254380	5366078	0,12%
24	0,087	254480	5365878	0,12%
25	0,086	254480	5366278	0,12%
26	0,085	254380	5365978	0,12%
27	0,085	254380	5366178	0,12%
28	0,082	254280	5366078	0,12%
29	0,082	254380	5365878	0,12%
30	0,080	254280	5366178	0,11%
31	0,080	254380	5366278	0,11%
32	0,079	254280	5365978	0,11%
33	0,078	254180	5366078	0,11%
34	0,077	254280	5365878	0,11%
35	0,077	255480	5365078	0,11%
36	0,076	254580	5366378	0,11%
37	0,075	254180	5366178	0,11%
38	0,075	254680	5366378	0,11%
39	0,075	254280	5365778	0,11%
40	0,075	254180	5365978	0,11%
41	0,074	255480	5365278	0,11%
42	0,074	254280	5366278	0,11%
43	0,074	254480	5366378	0,11%
44	0,074	255480	5365178	0,11%
45	0,073	254080	5366078	0,10%
46	0,073	254180	5365878	0,10%
47	0,072	254080	5366178	0,10%
48	0,071	253980	5365778	0,10%
49	0,071	254380	5366378	0,10%
50	0,071	254080	5365978	0,10%

APPENDIX E-4

Table E-4.4: Fifty (50) Highest Results for Particulate Concentration on an Annual Basis for 1999

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	0,123	254850	5365900	0,18%
2	0,122	254780	5365978	0,17%
3	0,115	254780	5366078	0,16%
4	0,112	254680	5365978	0,16%
5	0,109	254680	5366078	0,16%
6	0,104	254580	5365978	0,15%
7	0,103	254580	5366078	0,15%
8	0,101	254680	5365878	0,14%
9	0,100	254780	5366178	0,14%
10	0,098	254680	5366178	0,14%
11	0,098	254480	5366078	0,14%
12	0,096	254480	5365978	0,14%
13	0,095	254580	5366178	0,14%
14	0,092	254380	5366078	0,13%
15	0,092	254480	5366178	0,13%
16	0,092	254580	5365878	0,13%
17	0,089	254380	5365978	0,13%
18	0,089	254380	5366178	0,13%
19	0,087	254280	5366078	0,12%
20	0,085	254280	5366178	0,12%
21	0,085	254680	5366278	0,12%
22	0,084	254480	5365878	0,12%
23	0,084	254780	5366278	0,12%
24	0,083	254839	5366274	0,12%
25	0,083	254280	5365978	0,12%
26	0,082	254180	5366078	0,12%
27	0,082	254580	5366278	0,12%
28	0,080	254480	5366278	0,11%
29	0,080	254180	5366178	0,11%
30	0,078	254380	5365878	0,11%
31	0,078	254080	5366078	0,11%
32	0,078	254180	5365978	0,11%
33	0,077	254325	5365800	0,11%
34	0,077	254380	5366278	0,11%
35	0,076	254080	5366178	0,11%
36	0,075	255550	5365400	0,11%
37	0,074	253980	5366078	0,11%
38	0,074	254280	5366278	0,11%
39	0,073	253980	5366178	0,10%
40	0,073	254080	5365978	0,10%
41	0,072	254280	5365878	0,10%
42	0,071	253880	5366078	0,10%
43	0,070	254180	5366278	0,10%
44	0,070	253980	5365978	0,10%
45	0,067	254180	5365878	0,10%
46	0,067	253880	5366178	0,10%
47	0,067	254080	5366278	0,10%
48	0,066	255580	5365178	0,09%
49	0,066	254580	5366378	0,09%
50	0,065	254480	5366378	0,09%

APPENDIX E-4

Table E-4.5: Fifty (50) Highest Results for Particulate Concentration on an Annual Basis for 2000

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	0,124	254780	5366078	0,18%
2	0,121	254780	5366178	0,17%
3	0,118	254850	5365900	0,17%
4	0,116	254780	5365978	0,17%
5	0,115	254680	5366178	0,16%
6	0,113	254680	5366078	0,16%
7	0,108	254580	5366178	0,15%
8	0,106	254680	5365978	0,15%
9	0,103	254580	5366078	0,15%
10	0,102	254680	5366278	0,15%
11	0,101	254780	5366278	0,14%
12	0,100	254480	5366178	0,14%
13	0,100	254839	5366274	0,14%
14	0,099	254580	5366278	0,14%
15	0,098	254680	5365878	0,14%
16	0,098	254580	5365978	0,14%
17	0,097	254480	5366278	0,14%
18	0,095	254480	5366078	0,14%
19	0,093	254380	5366178	0,13%
20	0,091	255550	5365400	0,13%
21	0,091	254480	5365978	0,13%
22	0,090	254380	5366278	0,13%
23	0,090	254580	5365878	0,13%
24	0,088	254380	5366078	0,13%
25	0,087	254280	5366178	0,12%
26	0,084	254380	5365978	0,12%
27	0,084	254280	5366278	0,12%
28	0,083	254480	5365878	0,12%
29	0,082	254280	5366078	0,12%
30	0,080	254325	5365800	0,11%
31	0,079	254480	5366378	0,11%
32	0,079	254580	5366378	0,11%
33	0,079	254180	5366178	0,11%
34	0,079	254280	5365978	0,11%
35	0,078	254380	5366378	0,11%
36	0,078	254180	5366278	0,11%
37	0,077	254180	5366078	0,11%
38	0,077	254380	5365878	0,11%
39	0,077	254680	5366378	0,11%
40	0,074	254180	5365978	0,11%
41	0,074	254080	5366178	0,11%
42	0,074	254280	5366378	0,11%
43	0,073	255480	5365278	0,10%
44	0,072	254080	5366078	0,10%
45	0,072	254080	5366278	0,10%
46	0,071	254280	5365878	0,10%
47	0,070	254080	5365978	0,10%
48	0,069	253980	5366178	0,10%
49	0,069	254180	5366378	0,10%
50	0,068	253980	5366078	0,10%

APPENDIX E-4

Table E-4.6: Fifty (50) Highest Results for Particulate Concentration on a Daily Basis for 1996

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Date	Criterion Percentage (%)
		X	Y		
1	1,446	255580	5365178	96-01-31	2,1%
2	1,319	255480	5365078	96-01-31	1,9%
3	1,249	255480	5364378	96-02-08	1,8%
4	1,232	255180	5364978	96-06-02	1,8%
5	1,204	255280	5365078	96-06-02	1,7%
6	1,194	255080	5364878	96-06-02	1,7%
7	1,115	254980	5364778	96-06-02	1,6%
8	1,108	255380	5365178	96-06-02	1,6%
9	1,102	254880	5364678	96-06-02	1,6%
10	1,087	255380	5364978	96-01-31	1,6%
11	1,069	255480	5364478	96-02-08	1,5%
12	1,061	255575	5364525	96-02-08	1,5%
13	1,039	255480	5365278	96-06-02	1,5%
14	1,031	255425	5365000	96-01-31	1,5%
15	1,017	254780	5364578	96-06-02	1,5%
16	0,980	255480	5364478	96-08-09	1,4%
17	0,973	255075	5364550	96-01-31	1,4%
18	0,963	255380	5364078	96-02-08	1,4%
19	0,955	255480	5364378	96-08-09	1,4%
20	0,946	254680	5364478	96-06-02	1,4%
21	0,933	255080	5364478	96-01-31	1,3%
22	0,928	255080	5364578	96-01-31	1,3%
23	0,911	254980	5364378	96-01-31	1,3%
24	0,890	255480	5365178	96-05-11	1,3%
25	0,882	254580	5364378	96-06-02	1,3%
26	0,877	255280	5364878	96-08-15	1,3%
27	0,864	255280	5364878	96-01-31	1,2%
28	0,854	254880	5364278	96-01-31	1,2%
29	0,850	255480	5365278	96-05-11	1,2%
30	0,848	255625	5365050	96-05-08	1,2%
31	0,830	255380	5365078	96-05-11	1,2%
32	0,830	255180	5364778	96-08-15	1,2%
33	0,828	255580	5365078	96-03-17	1,2%
34	0,825	254480	5364278	96-06-02	1,2%
35	0,823	255380	5364978	96-08-15	1,2%
36	0,812	255380	5365178	96-05-11	1,2%
37	0,805	255280	5363878	96-02-08	1,2%
38	0,803	254780	5364078	96-01-31	1,1%
39	0,796	255625	5365050	96-07-31	1,1%
40	0,792	255280	5365078	96-05-11	1,1%
41	0,791	255625	5365050	96-04-26	1,1%
42	0,787	254580	5364478	96-06-04	1,1%
43	0,784	254680	5364578	96-06-02	1,1%
44	0,779	255280	5364978	96-05-11	1,1%
45	0,779	254480	5364378	96-06-02	1,1%
46	0,776	255280	5364878	96-09-18	1,1%
47	0,773	255300	5365300	96-04-25	1,1%
48	0,773	254380	5364178	96-06-02	1,1%
49	0,773	255580	5364478	96-05-10	1,1%
50	0,773	254680	5363978	96-01-31	1,1%

APPENDIX E-4

Table E-4.7: Fifty (50) Highest Results for Particulate Concentration on a Daily Basis for 1997

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Date	Criterion Percentage (%)
		X	Y		
1	1,929	255380	5364478	97-02-09	2,8%
2	1,858	254450	5365100	97-12-05	2,7%
3	1,791	254380	5365078	97-12-05	2,6%
4	1,757	255580	5364478	97-02-09	2,5%
5	1,747	255580	5364378	97-02-09	2,5%
6	1,685	255280	5364278	97-02-09	2,4%
7	1,670	254380	5365178	97-12-05	2,4%
8	1,646	254280	5365078	97-12-05	2,4%
9	1,628	255600	5364325	97-06-01	2,3%
10	1,581	255480	5364478	97-07-12	2,3%
11	1,550	254080	5364978	97-12-05	2,2%
12	1,534	255280	5364378	97-02-09	2,2%
13	1,515	255575	5364525	97-02-09	2,2%
14	1,510	255580	5364478	97-11-06	2,2%
15	1,504	254180	5365078	97-12-05	2,1%
16	1,485	255575	5364525	97-11-06	2,1%
17	1,465	255250	5364200	97-02-09	2,1%
18	1,463	254280	5365178	97-12-05	2,1%
19	1,463	255380	5364278	97-07-12	2,1%
20	1,459	253980	5365078	97-12-05	2,1%
21	1,452	255580	5364378	97-06-01	2,1%
22	1,446	255180	5364178	97-02-09	2,1%
23	1,433	255575	5364525	97-06-01	2,0%
24	1,430	255580	5364378	97-11-06	2,0%
25	1,425	255580	5364478	97-06-01	2,0%
26	1,407	253880	5364878	97-12-05	2,0%
27	1,405	253875	5364875	97-12-05	2,0%
28	1,394	253980	5364978	97-12-05	2,0%
29	1,354	255180	5364078	97-02-09	1,9%
30	1,352	255600	5364325	97-02-09	1,9%
31	1,325	253880	5364325	97-12-05	1,9%
32	1,321	255600	5364325	97-11-06	1,9%
33	1,297	254380	5364325	97-12-05	1,9%
34	1,296	255625	5364325	97-02-09	1,9%
35	1,277	255080	5364325	97-02-09	1,8%
36	1,250	253880	5364325	97-12-05	1,8%
37	1,237	255080	5364325	97-02-09	1,8%
38	1,220	253880	5364325	97-12-05	1,7%
39	1,217	254980	5364325	97-02-09	1,7%
40	1,165	255380	5364325	97-07-12	1,7%
41	1,161	254980	5364325	97-02-09	1,7%
42	1,157	254080	5364325	97-12-05	1,7%
43	1,156	255480	5364325	97-02-14	1,7%
44	1,146	255480	5364325	97-06-01	1,6%
45	1,144	254880	5364325	97-02-09	1,6%
46	1,133	255380	5364325	97-02-09	1,6%
47	1,132	254850	5364325	97-09-25	1,6%
48	1,127	255480	5364325	97-02-14	1,6%
49	1,111	255280	5364325	97-07-12	1,6%
50	1,110	255580	5364325	97-03-06	1,6%

APPENDIX E-4

Table E-4.8: Fifty (50) Highest Results for Particulate Concentration on a Daily Basis for 1998

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Date	Criterion Percentage (%)
		X	Y		
1	1,462	255580	5365178	98-02-11	2,1%
2	1,454	255600	5364325	98-03-04	2,1%
3	1,362	255480	5365078	98-02-11	1,9%
4	1,293	255580	5364478	98-03-04	1,8%
5	1,272	255575	5364525	98-03-04	1,8%
6	1,249	255580	5365078	98-04-05	1,8%
7	1,243	255580	5364378	98-03-04	1,8%
8	1,128	255480	5365178	98-09-08	1,6%
9	1,115	255075	5364550	98-02-11	1,6%
10	1,100	255380	5365078	98-09-08	1,6%
11	1,098	255380	5364478	98-08-12	1,6%
12	1,065	255575	5364525	98-08-12	1,5%
13	1,060	255380	5364978	98-02-11	1,5%
14	1,057	255425	5365000	98-02-11	1,5%
15	1,054	255280	5364978	98-09-08	1,5%
16	1,039	255280	5364878	98-03-08	1,5%
17	1,038	255280	5364878	98-01-30	1,5%
18	1,037	254980	5364378	98-02-11	1,5%
19	1,031	255380	5364978	98-03-08	1,5%
20	1,017	255080	5364578	98-02-11	1,5%
21	1,004	254680	5364978	98-07-03	1,4%
22	1,002	255380	5364978	98-01-30	1,4%
23	1,002	255180	5364778	98-09-08	1,4%
24	1,000	254880	5364278	98-02-11	1,4%
25	0,999	254280	5364778	98-07-03	1,4%
26	0,997	255080	5364478	98-02-11	1,4%
27	0,997	255180	5364478	98-04-05	1,4%
28	0,996	254480	5364878	98-07-03	1,4%
29	0,991	255280	5364978	98-01-27	1,4%
30	0,989	255180	5364778	98-01-30	1,4%
31	0,982	255575	5364525	98-10-31	1,4%
32	0,980	255580	5365178	98-03-04	1,4%
33	0,980	255280	5364878	98-09-08	1,4%
34	0,977	255080	5364678	98-09-08	1,4%
35	0,976	255080	5364378	98-04-05	1,4%
36	0,973	255480	5364478	98-03-15	1,4%
37	0,967	255480	5363678	98-03-04	1,4%
38	0,967	255480	5365178	98-01-30	1,4%
39	0,961	255380	5365078	98-01-27	1,4%
40	0,960	255180	5364878	98-01-27	1,4%
41	0,949	255480	5365078	98-01-30	1,4%
42	0,949	255550	5365400	98-04-03	1,4%
43	0,942	255180	5364878	98-09-08	1,3%
44	0,940	255480	5363578	98-03-04	1,3%
45	0,940	255580	5365178	98-04-05	1,3%
46	0,937	255480	5365078	98-07-11	1,3%
47	0,935	255480	5365178	98-01-27	1,3%
48	0,934	255580	5365178	98-01-30	1,3%
49	0,930	255300	5365300	98-07-03	1,3%
50	0,927	255600	5364325	98-08-11	1,3%

APPENDIX E-4

Table E-4.9: Fifty (50) Highest Results for Particulate Concentration on a Daily Basis for 1999

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Date	Criterion Percentage (%)
		X	Y		
1	1,830	255575	5364525	99-05-03	2,6%
2	1,778	255580	5364478	99-05-03	2,5%
3	1,327	255580	5364378	99-05-03	1,9%
4	1,283	255280	5364878	99-03-15	1,8%
5	1,276	255180	5364778	99-03-15	1,8%
6	1,216	255080	5364678	99-03-15	1,7%
7	1,147	255380	5363978	99-05-03	1,6%
8	1,142	255580	5365178	99-12-03	1,6%
9	1,129	255380	5364978	99-03-15	1,6%
10	1,114	254980	5364578	99-03-15	1,6%
11	1,102	255380	5363878	99-05-03	1,6%
12	1,099	255580	5365078	99-12-07	1,6%
13	1,083	255380	5364478	99-02-15	1,5%
14	1,077	255480	5364378	99-05-03	1,5%
15	1,060	255480	5365178	99-03-15	1,5%
16	1,056	255080	5364978	99-04-16	1,5%
17	1,053	254980	5364878	99-04-16	1,5%
18	1,029	255180	5365078	99-04-16	1,5%
19	1,015	254880	5364478	99-03-15	1,5%
20	1,012	255480	5365078	99-12-03	1,4%
21	1,002	255475	5364050	99-05-03	1,4%
22	1,001	254780	5366078	99-11-13	1,4%
23	0,986	255480	5365278	99-04-16	1,4%
24	0,979	255575	5364525	99-09-26	1,4%
25	0,973	254880	5364778	99-04-16	1,4%
26	0,972	255380	5365078	99-03-15	1,4%
27	0,962	255550	5365400	99-04-16	1,4%
28	0,955	255280	5363578	99-05-03	1,4%
29	0,953	255380	5364078	99-05-03	1,4%
30	0,922	255280	5364278	99-02-15	1,3%
31	0,914	254780	5364378	99-03-15	1,3%
32	0,902	255580	5365078	99-06-16	1,3%
33	0,902	255580	5365178	99-08-20	1,3%
34	0,900	255480	5365078	99-03-15	1,3%
35	0,897	254780	5364678	99-04-16	1,3%
36	0,891	255280	5364978	99-03-15	1,3%
37	0,890	255380	5364378	99-02-15	1,3%
38	0,887	255580	5365178	99-12-07	1,3%
39	0,882	254680	5366178	99-11-13	1,3%
40	0,881	254680	5366078	99-11-13	1,3%
41	0,880	254580	5366178	99-11-13	1,3%
42	0,871	255480	5364478	99-07-28	1,2%
43	0,871	255580	5364378	99-06-22	1,2%
44	0,869	255280	5365178	99-04-16	1,2%
45	0,869	254680	5364178	99-03-15	1,2%
46	0,868	254780	5364278	99-03-15	1,2%
47	0,863	255250	5364200	99-02-15	1,2%
48	0,860	255480	5365078	99-08-20	1,2%
49	0,849	254580	5364078	99-03-15	1,2%
50	0,849	255280	5364978	99-02-17	1,2%

APPENDIX E-4

Table E-4.10: Fifty (50) Highest Results for Particulate Concentration on a Daily Basis for 2000

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Date	Criterion Percentage (%)
		X	Y		
1	2,282	255550	5365400	00-12-19	3,3%
2	2,141	255480	5365278	00-12-19	3,1%
3	1,802	255380	5365178	00-12-19	2,6%
4	1,575	255280	5365078	00-12-19	2,3%
5	1,480	255380	5365278	00-12-19	2,1%
6	1,395	255280	5365178	00-12-19	2,0%
7	1,374	255180	5364978	00-12-19	2,0%
8	1,362	255300	5365200	00-12-19	1,9%
9	1,328	255180	5365078	00-12-19	1,9%
10	1,245	255080	5364978	00-12-19	1,8%
11	1,243	255550	5365400	00-12-18	1,8%
12	1,198	255080	5364878	00-12-19	1,7%
13	1,190	254980	5364878	00-12-19	1,7%
14	1,179	255480	5365078	00-01-01	1,7%
15	1,170	255550	5365400	00-07-14	1,7%
16	1,161	255380	5364978	00-01-01	1,7%
17	1,155	255280	5364978	00-10-07	1,6%
18	1,143	255380	5365078	00-10-07	1,6%
19	1,135	255480	5365178	00-10-07	1,6%
20	1,115	254880	5364778	00-12-19	1,6%
21	1,088	255180	5364878	00-10-07	1,6%
22	1,060	254780	5364678	00-12-19	1,5%
23	1,050	255280	5364878	00-01-01	1,5%
24	1,047	254980	5364778	00-12-19	1,5%
25	1,039	254780	5366178	00-11-13	1,5%
26	1,029	255580	5365178	00-01-01	1,5%
27	1,022	254780	5365978	00-11-21	1,5%
28	1,016	255575	5364525	00-01-19	1,5%
29	1,014	254680	5365978	00-11-21	1,4%
30	1,013	254850	5365900	00-11-21	1,4%
31	1,008	255550	5365400	00-11-02	1,4%
32	0,996	255080	5364778	00-10-07	1,4%
33	0,989	255280	5364378	00-05-21	1,4%
34	0,976	254680	5364578	00-12-19	1,4%
35	0,957	254580	5365978	00-11-21	1,4%
36	0,956	254780	5366178	00-11-12	1,4%
37	0,955	255300	5365300	00-11-02	1,4%
38	0,953	254880	5364678	00-12-19	1,4%
39	0,947	255080	5364578	00-01-01	1,4%
40	0,941	255480	5364378	00-01-19	1,3%
41	0,936	254980	5364678	00-10-07	1,3%
42	0,932	254780	5366178	00-11-11	1,3%
43	0,918	254680	5366178	00-11-13	1,3%
44	0,910	255480	5365178	00-12-19	1,3%
45	0,906	255480	5365278	00-07-14	1,3%
46	0,902	255180	5364178	00-05-21	1,3%
47	0,900	254580	5364478	00-12-19	1,3%
48	0,899	255075	5364550	00-01-01	1,3%
49	0,892	254680	5366278	00-11-13	1,3%
50	0,889	254580	5366278	00-11-13	1,3%

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.

LÉGENDE :

Courbes de concentrations

Limite de propriété

ÉCHELLE 1 : 25 000

0 0,5 1,0 Km

CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1996

ALCAN

TECSULT

PROJET : **7953**

DATE : **Août 2001**

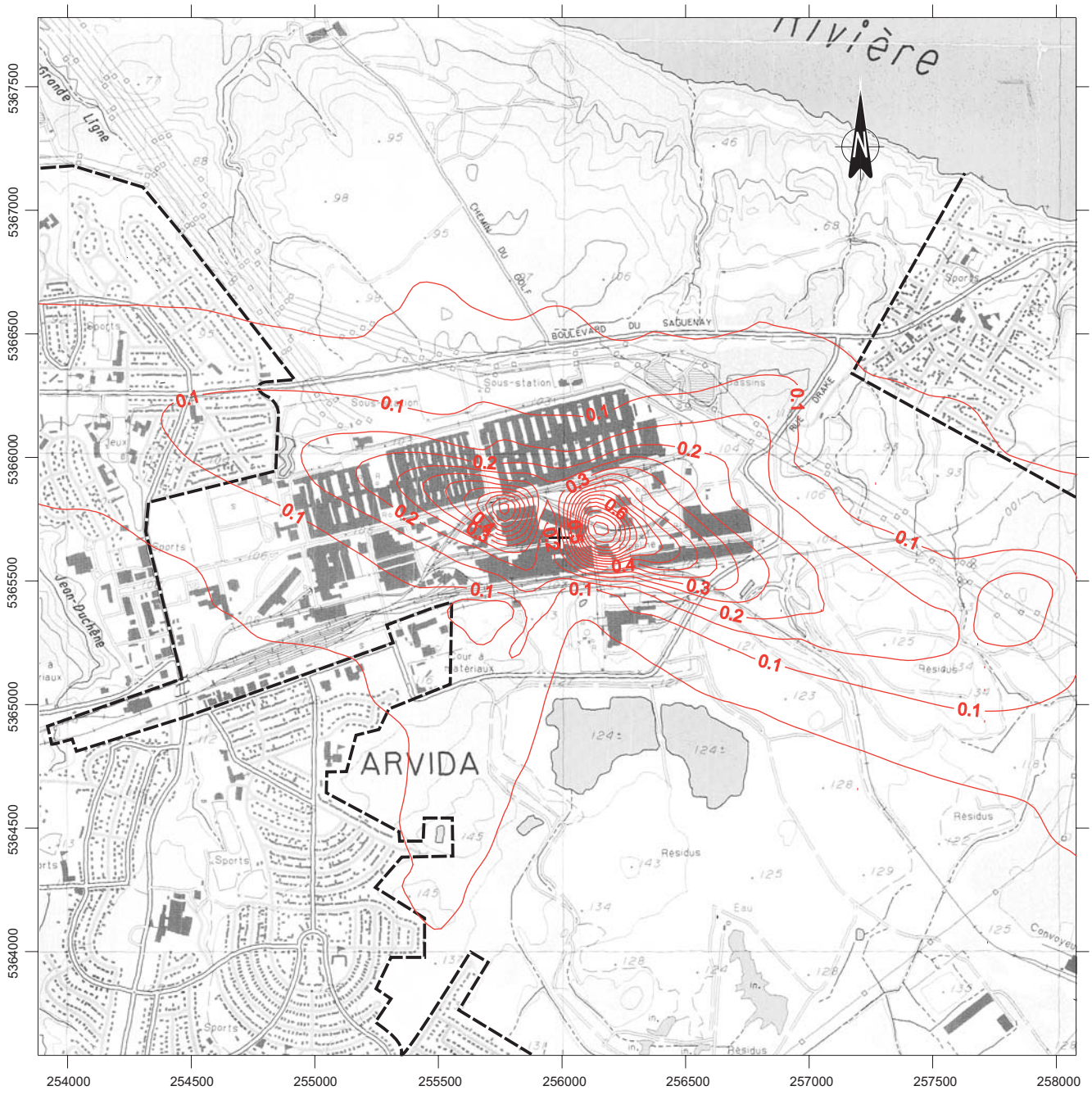
FIGURE : **E-4.1**

7953-E-4.1.cdr (2001.08.24) dm

E-4.1 Correspondence Table

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.	Source: MAP FROM THE MINISTÈRE DES RESSOURCES NATURELLES, QUEBEC, 1994
Mètres	Meters
LÉGENDE	LEGEND
Courbes de concentrations	Concentration Curves
Limite de propriété	Property Limits
ÉCHELLE 1 : 25 000	SCALE 1:25,000 0 0.5 1.0 Km
CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1996	ANNUAL AVERAGE PARTICLE CONCENTRATIONS (µg/m³) – 1996
PROJET : 7953	PROJECT: 7953
DATE : Août 2001	DATE: August 2001

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.



LÉGENDE :

Courbes de concentrations

Limite de propriété

ÉCHELLE 1 : 25 000

0 0,5 1,0 Km

CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1997

ALCAN

TECSULT

PROJET : **7953**

DATE : **Août 2001**

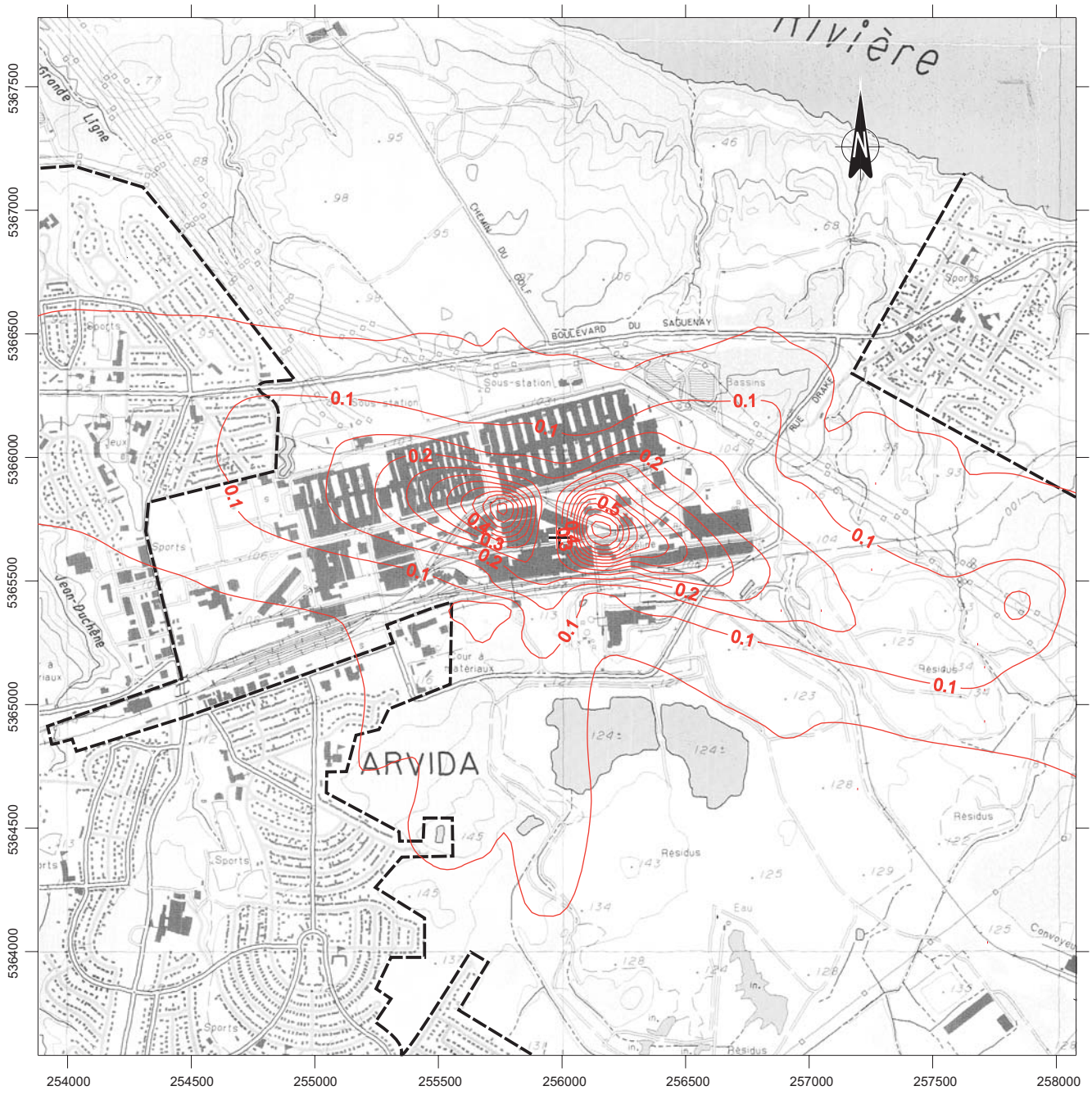
FIGURE : **E-4.2**

7953-E-4.2.cdr (2001.08.24) dm

E-4.2 Correspondence Table

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.	Source: MAP FROM THE MINISTÈRE DES RESSOURCES NATURELLES, QUEBEC, 1994
Mètres	Meters
LÉGENDE	LEGEND
Courbes de concentrations	Concentration Curves
Limite de propriété	Property Limits
ÉCHELLE 1 : 25 000	SCALE 1:25,000 0 0.5 1.0 Km
CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1997	ANNUAL AVERAGE PARTICLE CONCENTRATIONS (µg/m³) – 1997
PROJET : 7953	PROJECT: 7953
DATE : Août 2001	DATE: August 2001

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.



LÉGENDE :

Courbes de concentrations

Limite de propriété

ÉCHELLE 1 : 25 000

0 0,5 1,0 Km

ALCAN

CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1998

TECSULT

PROJET : **7953**

DATE : **Août 2001**

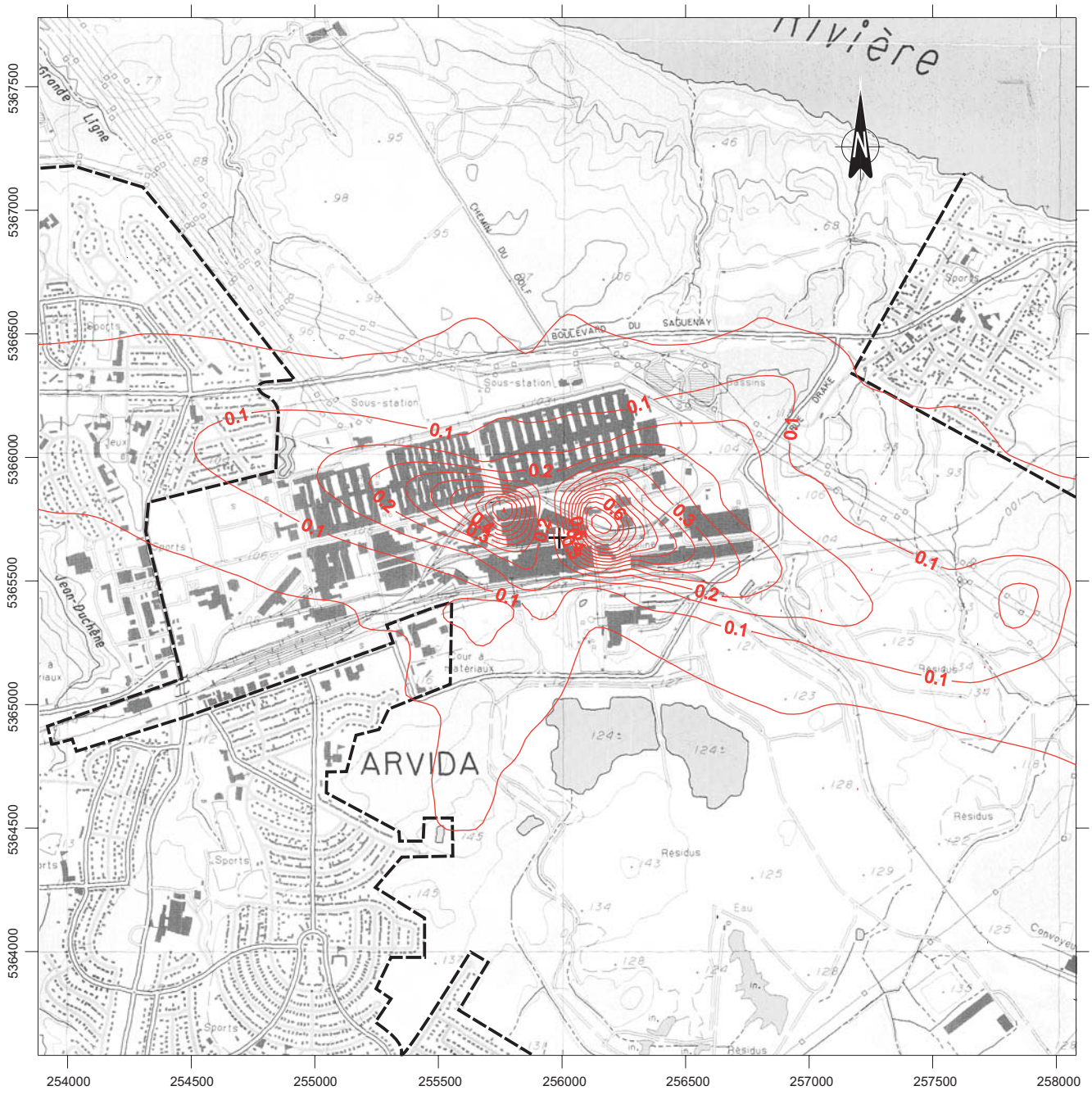
FIGURE : **E-4.3**

7953-E-4.3.cdr (2001.08.24) dm

E-4.3 Correspondence Table

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.	Source: MAP FROM THE MINISTÈRE DES RESSOURCES NATURELLES, QUEBEC, 1994
Mètres	Meters
LÉGENDE	LEGEND
Courbes de concentrations	Concentration Curves
Limite de propriété	Property Limits
ÉCHELLE 1 : 25 000	SCALE 1:25,000
CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1998	ANNUAL AVERAGE PARTICLE CONCENTRATIONS (µg/m³) – 1998
PROJET : 7953	PROJECT: 7953
DATE : Août 2001	DATE: August 2001

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.



LÉGENDE :

Courbes de concentrations

Limite de propriété

ÉCHELLE 1 : 25 000

0 0,5 1,0 Km

ALCAN

TECSULT

CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m³) - Année 1999

PROJET : **7953**

DATE : **Août 2001**

FIGURE : **E-4.4**

7953-E-4.4.cdr (2001.08.24) dm

E-4.4 Correspondence Table

Source : CARTE DU MINISTÈRE DES RESSOURCES NATURELLES, QUÉBEC, 1994.	Source: MAP FROM THE MINISTÈRE DES RESSOURCES NATURELLES, QUEBEC, 1994
Mètres	Meters
LÉGENDE	LEGEND
Courbes de concentrations	Concentration Curves
Limite de propriété	Property Limits
ÉCHELLE 1 : 25 000	SCALE 1:25,000
CONCENTRATIONS MOYENNES ANNUELLES DE PARTICULES (µg/m^3) - Année 1999	ANNUAL AVERAGE PARTICLE CONCENTRATIONS (µg/m^3) – 1999
PROJET : 7953	PROJECT: 7953
DATE : Août 2001	DATE: August 2001

Appendix E-5

Results – NH3

Table 1.1

Fifty (50) Highest Results for Ammonia Concentration on an Hourly Basis for 1996

Rank	Concentration ($\mu g/m^{3)}$	Receiver Location (m)		Month	Day	Hour	Wind Direction (°)	Speed (m/s)	Temperature (°C)	Stability Class (1 à 6)	Height Mixture (Rural) (m)	Criterion Percentage (%)
		X	Y									
1	412,4366	255480	5364478	7	16	21	202	1,0289	291,5	6	2423,1	13%
2	389,777	255580	5364478	5	10	24	198	1	277,6	7	1586,8	12%
3	362,8135	255575	5364525	5	28	2	200	1,0289	275,9	6	2438,7	11%
4	362,4096	255575	5364525	12	22	1	199	1,0289	264,3	6	724,1	11%
5	361,8304	255580	5364478	12	22	1	199	1,0289	264,3	6	724,1	11%
6	347,9598	255480	5364378	8	9	23	201	1,0289	289,3	6	1929	11%
7	343,2897	255575	5364525	2	8	5	200	1	268,7	6	1714,8	11%
8	338,8285	255480	5364478	2	1	22	202	1	247	6	1494,8	11%
9	331,9222	255480	5364378	9	23	22	201	1,0289	278,2	6	1044,1	10%
10	330,9756	255580	5364378	5	10	24	198	1	277,6	7	1586,8	10%
11	325,676	255480	5364478	8	9	23	201	1,0289	289,3	6	1929	10%
12	319,9936	255575	5364525	5	10	24	198	1	277,6	7	1586,8	10%
13	319,6757	255480	5364378	2	22	18	201	1,0289	270,4	6	834,6	10%
14	317,1962	255480	5364378	2	8	4	201	1,0289	268,7	6	1778,9	10%
15	314,2853	255380	5364278	7	16	21	202	1,0289	291,5	6	2423,1	10%
16	312,0052	255480	5364478	9	23	22	201	1,0289	278,2	6	1044,1	10%
17	302,4318	255480	5364378	7	16	21	202	1,0289	291,5	6	2423,1	9%
18	300,4351	255480	5364478	7	11	1	203	2,0578	287,6	6	1756,4	9%
19	300,273	255480	5364478	2	22	18	201	1,0289	270,4	6	834,6	9%
20	299,0786	255480	5364378	5	28	2	200	1,0289	275,9	6	2438,7	9%
21	297,8824	255480	5364478	2	8	4	201	1,0289	268,7	6	1778,9	9%
22	293,3479	255580	5364478	5	28	2	200	1,0289	275,9	6	2438,7	9%
23	289,2028	255575	5364525	8	9	23	201	1,0289	289,3	6	1929	9%
24	288,4219	255380	5364278	10	17	3	204	1,0289	272	6	1904,7	9%
25	286,6432	255380	5364278	12	3	17	204	1	273,1	6	981,2	9%
26	285,5699	255480	5364378	2	8	5	200	1	268,7	6	1714,8	9%
27	282,4369	255480	5364478	10	17	3	204	1,0289	272	6	1904,7	9%
28	279,8846	255480	5364478	12	3	17	204	1	273,1	6	981,2	9%
29	279,0436	255580	5364478	2	8	5	200	1	268,7	6	1714,8	9%
30	276,7339	255600	5364325	8	27	1	196	2,0578	278,7	6	1278,3	9%
31	276,223	255600	5364325	5	11	1	196	2,0578	277,6	6	1544,5	9%
32	274,0803	255575	5364525	9	23	22	201	1,0289	278,2	6	1044,1	9%
33	267,4844	255380	5364278	2	15	24	204	1,0289	250,4	7	611,2	8%
34	264,2937	255380	5364478	3	28	21	206	1,5433	266,5	6	2140,7	8%
35	263,7772	255575	5364525	2	22	18	201	1,0289	270,4	6	834,6	8%
36	262,0642	255380	5364278	2	1	22	202	1	247	6	1494,8	8%
37	261,7591	255575	5364525	2	8	4	201	1,0289	268,7	6	1778,9	8%
38	261,611	255480	5364478	2	15	24	204	1,0289	250,4	7	611,2	8%
39	259,0015	255380	5364278	7	11	1	203	2,0578	287,6	6	1756,4	8%
40	249,0725	255480	5364378	2	1	22	202	1	247	6	1494,8	8%
41	247,4996	255380	5364478	5	28	2	200	1,0289	275,9	6	2438,7	8%
42	240,3922	255380	5364478	11	23	21	206	1,0289	259,8	6	1187,8	8%
43	235,716	255580	5364378	8	2	22	197	2,5722	289,8	6	1522,5	7%
44	235,2237	255580	5364378	8	27	1	196	2,0578	278,7	6	1278,3	7%
45	234,7943	255580	5364378	5	11	1	196	2,0578	277,6	6	1544,5	7%
46	231,5213	255380	5364478	10	9	24	205	1,5433	280,4	6	1458,5	7%
47	231,2345	255380	5364078	8	9	23	201	1,0289	289,3	6	1929	7%
48	227,0032	255380	5364378	10	9	24	205	1,5433	280,4	6	1458,5	7%
49	226,0105	255580	5364378	12	22	1	199	1,0289	264,3	6	724,1	7%
50	225,2421	255280	5364278	3	28	21	206	1,5433	266,5	6	2140,7	7%

Table 1.2

Fifty (50) Highest Results for Ammonia Concentration on an Hourly Basis for 1997

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Month	Day	Hour	Wind Direction (°)	Speed (m/s)	Temperature (°C)	Stability Class (1 à 6)	Height Mixture (Rural) (m)	Criterion Percentage (%)
		X	Y									
1	406	255580	5364478	8	25	23	198	1,03	284,8	7	2625	13%
2	403	255575	5364525	8	4	24	199	1,03	286,5	6	1355	13%
3	401	255580	5364478	8	4	24	199	1,03	286,5	6	1355	13%
4	392	255480	5364478	7	12	1	203	1,00	287,6	7	2553	12%
5	389	255480	5364478	7	12	2	203	1,00	286,5	7	2524	12%
6	386	255575	5364525	9	18	1	199	1,54	284,8	6	1230	12%
7	379	255580	5364478	9	18	1	199	1,54	284,8	6	1230	12%
8	378	255575	5364525	6	1	21	200	1,03	284,8	6	1297	12%
9	370	255580	5364378	5	13	23	197	1,03	279,3	6	877	12%
10	361	255600	5364325	6	1	22	196	1,00	282,0	7	1306	11%
11	357	255580	5364378	11	6	20	197	1,00	274,3	6	314	11%
12	356	255575	5364525	11	9	24	200	1,00	275,4	6	344	11%
13	355	255380	5364278	7	12	1	203	1,00	287,6	7	2553	11%
14	353	255380	5364278	7	12	2	203	1,00	286,5	7	2524	11%
15	353	255575	5364525	11	6	21	200	1,00	274,3	6	317	11%
16	352	255480	5364378	7	2	2	201	1,03	291,5	7	1138	11%
17	347	255580	5364378	3	22	24	93	4,12	258,7	5	1196	11%
18	345	255580	5364378	8	25	23	198	1,03	284,8	7	2625	11%
19	339	255480	5364478	2	14	2	202	1,00	247,0	7	478	11%
20	332	255575	5364525	8	25	23	198	1,03	284,8	7	2625	10%
21	332	255580	5364378	3	6	4	197	1,54	261,5	6	979	10%
22	330	255580	5364378	1	2	23	197	1,00	255,4	6	377	10%
23	329	255600	5364325	11	6	22	195	1,03	274,3	6	321	10%
24	329	255480	5364478	7	2	2	201	1,03	291,5	7	1138	10%
25	325	255580	5364378	2	9	4	197	1,00	250,9	6	475	10%
26	324	255600	5364325	1	9	19	196	1,00	256,5	6	438	10%
27	319	255600	5364325	2	4	3	196	1,00	251,5	7	509	10%
28	319	255580	5364478	5	13	23	197	1,03	279,3	6	877	10%
29	318	255600	5364325	2	9	3	196	1,00	249,8	7	470	10%
30	317	255580	5364378	6	1	22	196	1,00	282,0	7	1306	10%
31	316	255575	5364525	2	14	1	200	1,00	245,4	7	491	10%
32	310	255480	5364378	6	1	21	200	1,03	284,8	6	1297	10%
33	309	255580	5364478	11	6	20	197	1,00	274,3	6	314	10%
34	306	255480	5364378	12	25	6	201	1,54	260,9	7	610	10%
35	305	255580	5364478	6	1	21	200	1,03	284,8	6	1297	10%
36	302	255600	5364325	5	13	23	197	1,03	279,3	6	877	9%
37	301	255600	5364325	1	2	22	195	1,00	255,4	6	369	9%
38	297	255380	5364278	8	8	4	204	1,00	280,9	7	2637	9%
39	296	255480	5364378	11	9	24	200	1,00	275,4	6	344	9%
40	294	255480	5364378	11	6	21	200	1,00	274,3	6	317	9%
41	293	255575	5364525	7	2	2	201	1,03	291,5	7	1138	9%
42	291	255600	5364325	11	6	20	197	1,00	274,3	6	314	9%
43	291	255580	5364478	3	22	24	93	4,12	258,7	5	1196	9%
44	290	255480	5364478	8	8	4	204	1,00	280,9	7	2637	9%
45	288	255580	5364478	11	9	24	200	1,00	275,4	6	344	9%
46	287	255580	5364478	11	6	21	200	1,00	274,3	6	317	9%
47	285	255600	5364325	3	22	24	93	4,12	258,7	5	1196	9%
48	283	255580	5364378	1	9	19	196	1,00	256,5	6	438	9%
49	283	255580	5364478	1	2	23	197	1,00	255,4	6	377	9%
50	279	255580	5364478	2	9	4	197	1,00	250,9	6	475	9%

Table 1.3

Fifty (50) Highest Results for Ammonia Concentration on an Hourly Basis for 1998

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Month	Day	Hour	Wind Direction (°)	Speed (m/s)	Temperature (°C)	Stability Class (1 à 6)	Height Mixture (Rural) (m)	Criterion Percentage (%)
		X	Y									
1	414	255575	5364525	8	12	24	199,4	1,11	285,2	6	1550	13%
2	391	255580	5364478	12	5	23	198,4	1,11	266,4	6	741	12%
3	378	255580	5364478	8	12	24	199,4	1,11	285,2	6	1550	12%
4	377	255580	5364478	2	20	24	198,7	0,00	269,6	6	886	12%
5	374	255480	5364478	5	11	1	201,6	1,11	280,1	6	1689	12%
6	366	255575	5364525	11	23	5	199,4	1,67	275,5	6	696	11%
7	358	255600	5364325	5	10	6	195,9	0,00	278,2	6	1328	11%
8	355	255575	5364525	2	20	24	198,7	0,00	269,6	6	886	11%
9	348	255600	5364325	4	5	21	196,2	1,39	278,0	6	1056	11%
10	347	255575	5364525	12	5	23	198,4	1,11	266,4	6	741	11%
11	346	255480	5364478	12	9	24	203,3	1,11	263,0	6	798	11%
12	345	255600	5364325	11	6	5	195,4	0,00	273,6	6	1132	11%
13	344	255600	5364325	8	11	21	194,9	1,11	288,3	6	1556	11%
14	342	255480	5364478	11	27	4	202	1,67	271,7	6	1735	11%
15	340	255600	5364325	3	4	23	196,2	1,39	270,6	6	627	11%
16	338	255480	5364478	5	1	22	203,2	1,67	281,3	6	1655	11%
17	333	255600	5364325	1	6	4	196	1,11	258,5	6	1020	10%
18	331	255480	5364378	10	10	21	201	0,00	280,9	6	983	10%
19	329	255580	5364478	11	23	5	199,4	1,67	275,5	6	696	10%
20	329	255480	5364378	10	17	21	200,5	0,00	282,6	6	715	10%
21	327	255575	5364525	10	17	21	200,5	0,00	282,6	6	715	10%
22	325	255575	5364525	10	31	20	199,8	1,94	278,2	6	916	10%
23	322	255480	5364378	5	11	1	201,6	1,11	280,1	6	1689	10%
24	321	255580	5364378	4	5	21	196,2	1,39	278,0	6	1056	10%
25	320	255480	5364478	3	15	1	201,3	1,39	268,6	6	1571	10%
26	319	255380	5364278	12	9	24	203,3	1,11	263,0	6	798	10%
27	317	255480	5364378	3	15	1	201,3	1,39	268,6	6	1571	10%
28	314	255480	5364478	1	18	2	203,4	0,00	255,1	6	873	10%
29	313	255580	5364378	3	4	23	196,2	1,39	270,6	6	627	10%
30	313	255480	5364478	10	10	21	201	0,00	280,9	6	983	10%
31	311	255480	5364378	3	6	20	200,9	0,00	267,4	6	1181	10%
32	304	255580	5364378	5	10	6	195,9	0,00	278,2	6	1328	9%
33	300	255380	5364278	5	1	22	203,2	1,67	281,3	6	1655	9%
34	298	255380	5364278	1	18	2	203,4	0,00	255,1	6	873	9%
35	295	255600	5364325	4	30	2	194,6	0,00	273,4	6	814	9%
36	295	255580	5364378	12	5	23	198,4	1,11	266,4	6	741	9%
37	294	255580	5364378	1	6	4	196	1,11	258,5	6	1020	9%
38	283	255480	5364478	3	6	20	200,9	0,00	267,4	6	1181	9%
39	279	255380	5364478	8	13	23	206,4	1,11	284,5	6	1612	9%
40	278	255600	5364325	7	4	5	194,7	1,67	287,3	6	1137	9%
41	275	255480	5364478	9	18	4	203,9	1,67	275,5	6	947	9%
42	272	255575	5364525	10	10	21	201	0,00	280,9	6	983	9%
43	270	255380	5364278	9	18	4	203,9	1,67	275,5	6	947	8%
44	267	255380	5364278	5	11	1	201,6	1,11	280,1	6	1689	8%
45	265	255575	5364525	3	6	20	200,9	0,00	267,4	6	1181	8%
46	265	255580	5364478	10	31	20	199,8	1,94	278,2	6	916	8%
47	265	255380	5364478	8	12	1	205,9	0,00	284,7	6	1560	8%
48	264	255480	5364378	11	27	4	202	1,67	271,7	6	1735	8%
49	263	255380	5364478	1	28	4	206,2	1,39	261,1	6	367	8%
50	263	255575	5364525	3	4	6	199,1	2,50	270,1	6	564	8%

Table 1.4

Fifty (50) Highest Results for Ammonia Concentration on an Hourly Basis for 1999

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Month	Day	Hour	Wind Direction (°)	Speed (m/s)	Temperature (°C)	Stability Class (1 à 6)	Height Mixture (Rural) (m)	Criterion Percentage (%)
		X	Y									
1	409	255575	5364525	9	16	21	199,3	1,39	285,2	6	933	13%
2	400	255480	5364478	7	28	3	203,1	1,11	288,9	6	1696	12%
3	398	255580	5364478	5	3	5	198,6	1,00	279,1	6	2827	12%
4	385	255575	5364525	11	27	6	199,3	1,00	277,8	6	1364	12%
5	385	255575	5364525	9	26	3	199,2	1,00	277,6	6	1267	12%
6	378	255580	5364478	9	16	21	199,3	1,39	285,2	6	933	12%
7	371	255480	5364478	9	22	5	201,7	1,00	279,1	6	1064	12%
8	371	255580	5364478	5	3	4	197,6	1,00	279,9	6	2834	12%
9	368	255575	5364525	5	3	5	198,6	1,00	279,1	6	2827	12%
10	367	255580	5364478	9	26	3	199,2	1,00	277,6	6	1267	11%
11	364	255480	5364478	4	6	6	201,7	1,11	269,2	6	1358	11%
12	360	255580	5364478	11	27	6	199,3	1,00	277,8	6	1364	11%
13	358	255580	5364478	9	21	23	198	1,67	279,8	6	1134	11%
14	357	255380	5364278	7	28	3	203,1	1,11	288,9	6	1696	11%
15	357	255580	5364378	5	3	4	197,6	1,00	279,9	6	2834	11%
16	354	255580	5364378	6	22	5	196,4	1,00	286,4	6	2646	11%
17	353	255600	5364325	6	22	5	196,4	1,00	286,4	6	2646	11%
18	349	255480	5364478	6	22	4	203,1	1,67	286,9	6	2658	11%
19	332	255480	5364378	6	5	5	200,8	1,00	280,7	6	2059	10%
20	325	255480	5364378	10	26	18	200,9	1,00	276,1	6	558	10%
21	309	255580	5364378	9	21	23	198	1,67	279,8	6	1134	10%
22	305	255380	5364278	6	22	4	203,1	1,67	286,9	6	2658	10%
23	303	255480	5364378	9	22	5	201,7	1,00	279,1	6	1064	9%
24	302	255480	5364378	4	6	6	201,7	1,11	269,2	6	1358	9%
25	296	255480	5364478	10	26	18	200,9	1,00	276,1	6	558	9%
26	294	255575	5364525	6	5	5	200,8	1,00	280,7	6	2059	9%
27	293	255575	5364525	9	21	23	198	1,67	279,8	6	1134	9%
28	291	255480	5364478	6	5	5	200,8	1,00	280,7	6	2059	9%
29	282	255575	5364525	5	3	4	197,6	1,00	279,9	6	2834	9%
30	280	255580	5364378	5	3	5	198,6	1,00	279,1	6	2827	9%
31	277	255575	5364525	10	26	18	200,9	1,00	276,1	6	558	9%
32	273	255380	5364478	9	8	4	205,9	1,00	291,4	6	834	9%
33	272	255380	5364278	9	22	5	201,7	1,00	279,1	6	1064	9%
34	269	255380	5364478	4	27	18	205,8	1,67	284,4	6	1791	8%
35	269	255600	5364325	11	20	1	194,4	1,39	275,3	6	924	8%
36	267	255600	5364325	6	10	1	194,6	1,67	284,3	6	1472	8%
37	264	255380	5364278	4	6	6	201,7	1,11	269,2	6	1358	8%
38	263	255575	5364525	5	3	2	199,8	2,50	280,1	6	2847	8%
39	259	255380	5364478	5	16	6	206,5	1,00	283,3	6	1985	8%
40	257	255380	5364278	9	2	6	204,6	1,11	288,0	6	1177	8%
41	255	255580	5364478	6	22	5	196,4	1,00	286,4	6	2646	8%
42	251	255380	5364478	12	7	24	205,4	1,11	272,9	6	876	8%
43	246	255380	5364478	2	15	7	205,9	1,11	254,6	6	401	8%
44	246	255380	5364278	8	25	4	204,7	1,00	288,6	6	2075	8%
45	242	255480	5364378	11	27	6	199,3	1,00	277,8	6	1364	8%
46	242	255600	5364325	12	7	5	194,4	1,67	272,7	6	938	8%
47	241	255480	5364378	9	16	21	199,3	1,39	285,2	6	933	8%
48	240	255380	5364278	1	28	6	204,3	1,00	248,3	6	820	8%
49	238	255600	5364325	5	3	4	197,6	1,00	279,9	6	2834	7%
50	236	255380	5364478	4	3	1	206,7	1,00	269,7	6	892	7%

Table 1.5

Fifty (50) Highest Results for Ammonia Concentration on an Hourly Basis for 2000

Rank	Concentration ($\mu g/m^{3)}$	Receiver Location (m)		Month	Day	Hour	Wind Direction (°)	Speed (m/s)	Temperature (°C)	Stability Class (1 à 6)	Height Mixture (Rural) (m)	Criterion Percentage (%)
		X	Y									
1	395	255480	5364478	8	3	19	203,3	1,11	294,2	6	1323	12%
2	395	255580	5364478	10	5	21	198,2	1,00	277,3	6	1347	12%
3	380	255575	5364525	11	5	2	199	1,00	276,6	6	738	12%
4	378	255580	5364478	11	5	2	199	1,00	276,6	6	738	12%
5	375	255575	5364525	4	22	4	199,1	1,00	273,4	6	1543	12%
6	373	255480	5364478	4	15	21	201,9	1,00	273,8	6	918	12%
7	371	255575	5364525	11	1	23	199,9	1,11	269,8	6	348	12%
8	366	255580	5364478	4	22	4	199,1	1,00	273,4	6	1543	11%
9	365	255575	5364525	1	10	1	199,9	1,11	266,2	6	1338	11%
10	362	255380	5364278	8	3	19	203,3	1,11	294,2	6	1323	11%
11	355	255580	5364478	1	19	22	198,4	1,00	252,3	6	374	11%
12	354	255580	5364378	11	6	23	196,6	1,00	278,8	6	974	11%
13	350	255580	5364478	3	4	21	198	1,67	270,9	6	856	11%
14	337	255575	5364525	10	5	21	198,2	1,00	277,3	6	1347	11%
15	332	255480	5364478	11	8	24	203,5	1,00	274,4	6	967	10%
16	331	255480	5364478	1	19	23	201,7	1,00	252,7	6	382	10%
17	330	255600	5364325	11	6	23	196,6	1,00	278,8	6	974	10%
18	329	255480	5364478	6	11	3	201,7	1,67	275,9	6	1503	10%
19	325	255580	5364378	3	10	20	196,6	1,00	260,6	6	966	10%
20	323	255480	5364478	2	4	16	201,8	1,67	258,2	6	469	10%
21	321	255600	5364325	11	2	21	194,9	1,00	275,0	6	428	10%
22	319	255600	5364325	12	21	22	195,2	1,39	260,4	6	337	10%
23	318	255380	5364278	11	8	24	203,5	1,00	274,4	6	967	10%
24	315	255580	5364378	10	5	21	198,2	1,00	277,3	6	1347	10%
25	314	255575	5364525	1	19	22	198,4	1,00	252,3	6	374	10%
26	314	255600	5364325	2	18	8	195,5	1,00	246,7	6	10	10%
27	307	255480	5364478	2	11	2	203,5	1,00	255,8	6	837	10%
28	307	255480	5364378	1	25	17	200,8	1,00	264,0	6	658	10%
29	305	255580	5364478	11	1	23	199,9	1,11	269,8	6	348	10%
30	304	255600	5364325	3	10	20	196,6	1,00	260,6	6	966	10%
31	303	255580	5364378	3	4	21	198	1,67	270,9	6	856	9%
32	301	255580	5364478	1	10	1	199,9	1,11	266,2	6	1338	9%
33	295	255580	5364378	10	9	22	197	1,94	274,5	6	1188	9%
34	295	255380	5364278	2	11	2	203,5	1,00	255,8	6	837	9%
35	289	255480	5364378	11	1	23	199,9	1,11	269,8	6	348	9%
36	287	255575	5364525	3	4	21	198	1,67	270,9	6	856	9%
37	286	255480	5364378	6	11	3	201,7	1,67	275,9	6	1503	9%
38	282	255380	5364278	4	15	21	201,9	1,00	273,8	6	918	9%
39	282	255480	5364378	4	15	21	201,9	1,00	273,8	6	918	9%
40	279	255480	5364378	1	10	1	199,9	1,11	266,2	6	1338	9%
41	272	255580	5364478	11	6	23	196,6	1,00	278,8	6	974	8%
42	271	255575	5364525	1	25	17	200,8	1,00	264,0	6	658	8%
43	271	255480	5364378	1	19	23	201,7	1,00	252,7	6	382	8%
44	269	255480	5364378	2	4	16	201,8	1,67	258,2	6	469	8%
45	269	255480	5364478	1	25	17	200,8	1,00	264,0	6	658	8%
46	269	255580	5364378	1	19	22	198,4	1,00	252,3	6	374	8%
47	262	255600	5364325	12	28	7	194,4	1,00	260,9	6	1376	8%
48	260	255380	5364478	8	8	4	205,5	1,00	289,0	6	1063	8%
49	258	255600	5364325	6	2	19	195,6	2,22	280,6	6	983	8%
50	253	255380	5364478	12	30	20	206,7	1,67	266,1	6	672	8%

Table 1.6

Fifty (50) Highest Results for Ammonia Concentration on an Annual Basis for 1996

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage
		X	Y	(%)
1	2,5832	254780	5366078	3%
2	2,5818	254780	5366178	3%
3	2,44945	254680	5366178	2%
4	2,37796	254680	5366078	2%
5	2,37367	254780	5365978	2%
6	2,2947	254580	5366178	2%
7	2,26878	254680	5366278	2%
8	2,2582	254780	5366278	2%
9	2,23687	254839	5366274	2%
10	2,2105	254850	5365900	2%
11	2,1923	254580	5366078	2%
12	2,167	254580	5366278	2%
13	2,1641	254680	5365978	2%
14	2,13561	254480	5366178	2%
15	2,08535	254480	5366278	2%
16	2,02329	254480	5366078	2%
17	1,9848	254380	5366178	2%
18	1,97766	254580	5365978	2%
19	1,9394	254380	5366278	2%
20	1,8725	254380	5366078	2%
21	1,84752	254280	5366178	2%
22	1,8101	254480	5365978	2%
23	1,8051	254580	5366378	2%
24	1,79409	254280	5366278	2%
25	1,78039	254480	5366378	2%
26	1,7647	254680	5365878	2%
27	1,73391	254280	5366078	2%
28	1,73312	254680	5366378	2%
29	1,7209	254380	5366378	2%
30	1,6895	254180	5366178	2%
31	1,662	254380	5365978	2%
32	1,6548	254180	5366278	2%
33	1,60947	254580	5365878	2%
34	1,6092	254180	5366078	2%
35	1,60619	254280	5366378	2%
36	1,58139	254080	5366178	2%
37	1,5296	254280	5365978	2%
38	1,52642	254080	5366278	2%
39	1,497	254080	5366078	1%
40	1,4883	254180	5366378	1%
41	1,4832	253980	5366178	1%
42	1,4739	254480	5365878	1%
43	1,45833	254080	5366378	1%
44	1,4431	254380	5366478	1%
45	1,4378	253980	5366278	1%
46	1,43145	254280	5366478	1%
47	1,42006	254480	5366478	1%
48	1,41058	254180	5365978	1%
49	1,3947	253980	5366078	1%
50	1,3676	254180	5366478	1%

Table 1.7

Fifty (50) Highest Results for Ammonia Concentration on an Annual Basis for 1997

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage
		X	Y	(%)
1	2,33212	254780	5366078	2%
2	2,3262	254780	5365978	2%
3	2,26422	254850	5365900	2%
4	2,20764	254680	5366078	2%
5	2,15148	254680	5365978	2%
6	2,07934	254580	5366078	2%
7	2,06379	254780	5366178	2%
8	2,05774	254680	5366178	2%
9	2,00811	254580	5366178	2%
10	1,98935	254580	5365978	2%
11	1,95071	254480	5366078	2%
12	1,92947	254480	5366178	2%
13	1,83899	254380	5366178	2%
14	1,83815	254480	5365978	2%
15	1,83463	254680	5365878	2%
16	1,82891	254380	5366078	2%
17	1,74489	254280	5366178	2%
18	1,71319	254280	5366078	2%
19	1,70149	254380	5365978	2%
20	1,70082	254480	5366278	2%
21	1,69694	254680	5366278	2%
22	1,68783	254580	5366278	2%
23	1,67228	254580	5365878	2%
24	1,64884	254780	5366278	2%
25	1,64526	254380	5366278	2%
26	1,63227	254839	5366274	2%
27	1,61571	254180	5366178	2%
28	1,60438	254180	5366078	2%
29	1,57807	254280	5365978	2%
30	1,5718	254280	5366278	2%
31	1,53086	254080	5366178	2%
32	1,52708	254480	5365878	2%
33	1,50501	254080	5366078	2%
34	1,48692	254180	5366278	1%
35	1,46397	254180	5365978	1%
36	1,45048	253980	5366178	1%
37	1,41297	253980	5366078	1%
38	1,4005	254080	5366278	1%
39	1,40046	254380	5365878	1%
40	1,3628	254080	5365978	1%
41	1,35434	253880	5366078	1%
42	1,34421	253980	5366278	1%
43	1,33061	255580	5364478	1%
44	1,32093	253880	5366178	1%
45	1,32046	254325	5365800	1%
46	1,31759	254580	5366378	1%
47	1,31592	254480	5366378	1%
48	1,31385	255575	5364525	1%
49	1,31078	254380	5366378	1%
50	1,29568	253980	5365978	1%

Table 1.8

Fifty (50) Highest Results for Ammonia Concentration on an Annual Basis for 1998

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	2,382	254850	5365900	2%
2	2,297	254780	5365978	2%
3	2,144	254780	5366078	2%
4	2,130	254680	5365978	2%
5	2,030	254680	5366078	2%
6	2,000	254680	5365878	2%
7	1,973	254580	5365978	2%
8	1,969	254780	5366178	2%
9	1,923	254580	5366078	2%
10	1,888	254680	5366178	2%
11	1,838	254580	5365878	2%
12	1,828	254480	5365978	2%
13	1,820	254480	5366078	2%
14	1,799	254580	5366178	2%
15	1,761	254325	5365800	2%
16	1,725	254839	5366274	2%
17	1,719	254380	5366078	2%
18	1,717	254780	5366278	2%
19	1,709	254480	5366178	2%
20	1,702	254680	5366278	2%
21	1,697	254380	5365978	2%
22	1,695	254480	5365878	2%
23	1,624	254380	5366178	2%
24	1,621	254580	5366278	2%
25	1,620	254280	5366078	2%
26	1,578	254280	5365978	2%
27	1,571	254380	5365878	2%
28	1,568	254480	5366278	2%
29	1,547	254280	5366178	2%
30	1,524	254180	5366078	2%
31	1,473	254380	5366278	1%
32	1,471	254180	5365978	1%
33	1,462	254280	5365878	1%
34	1,448	254180	5366178	1%
35	1,434	254080	5366078	1%
36	1,385	254080	5366178	1%
37	1,381	254280	5366278	1%
38	1,376	254080	5365978	1%
39	1,365	254180	5365878	1%
40	1,361	254580	5366378	1%
41	1,353	255550	5365400	1%
42	1,350	253980	5366078	1%
43	1,342	254680	5366378	1%
44	1,337	254280	5365778	1%
45	1,324	253980	5366178	1%
46	1,322	254480	5366378	1%
47	1,315	253980	5365978	1%
48	1,307	254080	5365878	1%
49	1,296	253880	5366078	1%
50	1,29409	254180	5366278	1%

Table 1.9

Fifty (50) Highest Results for Ammonia Concentration on an Annual Basis for 1999

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	2,304	254850	5365900	2%
2	2,253	254780	5365978	2%
3	2,089	254680	5365978	2%
4	2,023	254780	5366078	2%
5	1,952	254680	5366078	2%
6	1,932	254580	5365978	2%
7	1,876	254680	5365878	2%
8	1,869	254580	5366078	2%
9	1,786	254480	5365978	2%
10	1,780	254480	5366078	2%
11	1,706	254580	5365878	2%
12	1,688	254380	5366078	2%
13	1,672	254780	5366178	2%
14	1,657	254680	5366178	2%
15	1,652	254380	5365978	2%
16	1,627	254580	5366178	2%
17	1,595	254280	5366078	2%
18	1,590	254480	5366178	2%
19	1,558	254480	5365878	2%
20	1,547	254380	5366178	2%
21	1,530	254280	5365978	2%
22	1,504	254180	5366078	2%
23	1,497	254280	5366178	1%
24	1,430	254380	5365878	1%
25	1,421	254180	5365978	1%
26	1,417	254080	5366078	1%
27	1,413	254180	5366178	1%
28	1,402	254325	5365800	1%
29	1,367	254680	5366278	1%
30	1,360	254080	5366178	1%
31	1,340	254580	5366278	1%
32	1,336	253980	5366078	1%
33	1,334	254480	5366278	1%
34	1,328	254780	5366278	1%
35	1,322	254080	5365978	1%
36	1,317	254280	5365878	1%
37	1,306	254839	5366274	1%
38	1,305	253980	5366178	1%
39	1,288	254380	5366278	1%
40	1,284	253880	5366078	1%
41	1,258	253980	5365978	1%
42	1,238	254280	5366278	1%
43	1,218	254180	5365878	1%
44	1,201	253880	5366178	1%
45	1,190	254180	5366278	1%
46	1,181	255550	5365400	1%
47	1,177	257580	5366178	1%
48	1,155	253880	5365978	1%
49	1,153	254080	5365878	1%
50	1,142	254080	5366278	1%

Table 1.10

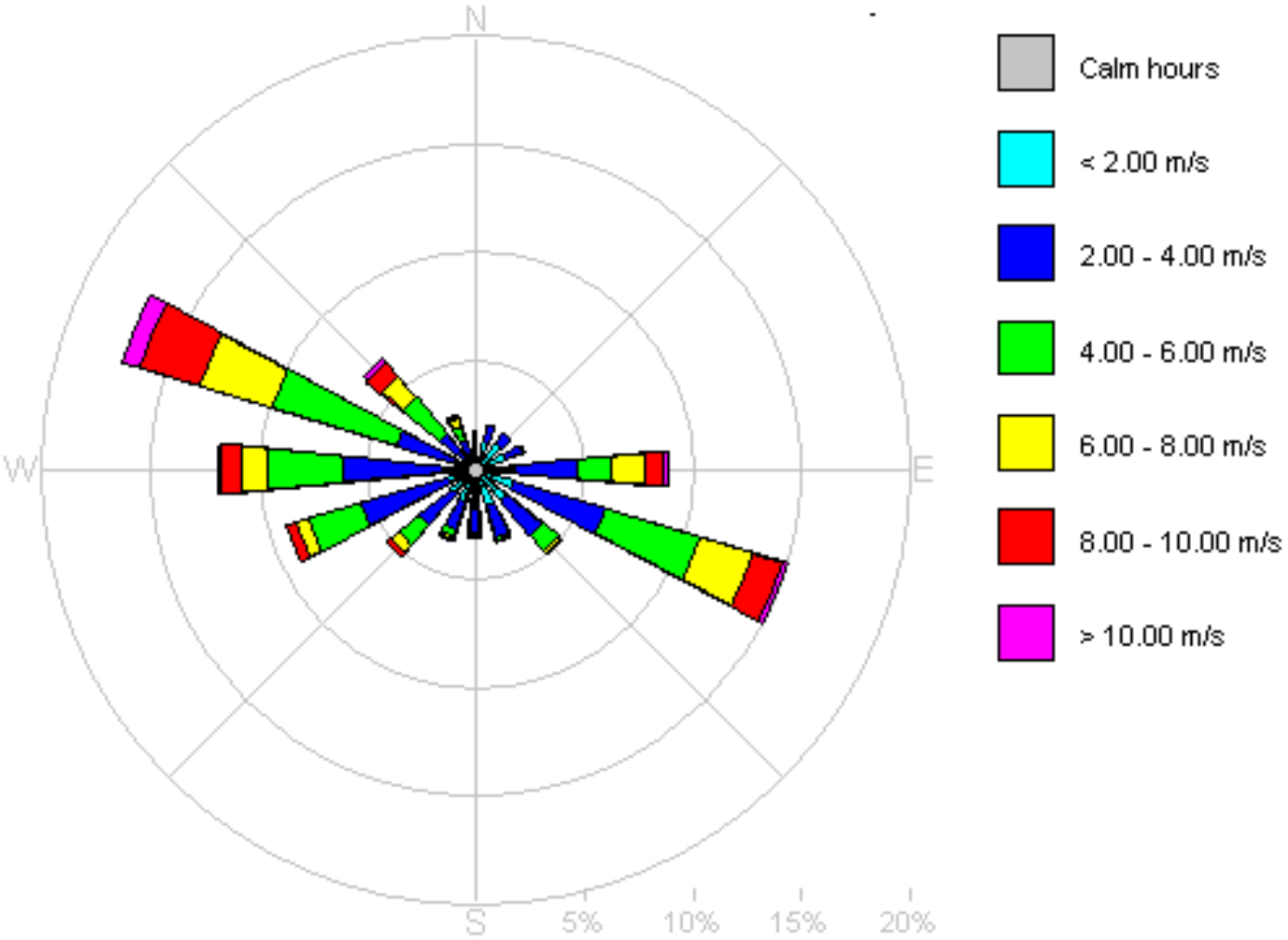
Fifty (50) Highest Results for Ammonia Concentration on an Annual Basis for 2000

Rank	Concentration ($\mu g/m^3$)	Receiver Location (m)		Criterion Percentage (%)
		X	Y	
1	2,265	254780	5366078	2%
2	2,183	254850	5365900	2%
3	2,163	254780	5365978	2%
4	2,158	254780	5366178	2%
5	2,080	254680	5366078	2%
6	2,072	254680	5366178	2%
7	1,978	254680	5365978	2%
8	1,956	254580	5366178	2%
9	1,910	254580	5366078	2%
10	1,829	254480	5366178	2%
11	1,818	254580	5365978	2%
12	1,796	254680	5366278	2%
13	1,791	254680	5365878	2%
14	1,760	254480	5366078	2%
15	1,758	254580	5366278	2%
16	1,736	254780	5366278	2%
17	1,721	254480	5366278	2%
18	1,702	254380	5366178	2%
19	1,701	254839	5366274	2%
20	1,676	254480	5365978	2%
21	1,632	254580	5365878	2%
22	1,628	254380	5366078	2%
23	1,618	254380	5366278	2%
24	1,582	254280	5366178	2%
25	1,551	254380	5365978	2%
26	1,513	254280	5366078	2%
27	1,506	254280	5366278	2%
28	1,493	254480	5365878	1%
29	1,443	254180	5366178	1%
30	1,440	254280	5365978	1%
31	1,425	254325	5365800	1%
32	1,412	254180	5366078	1%
33	1,397	254180	5366278	1%
34	1,376	254480	5366378	1%
35	1,372	254380	5365878	1%
36	1,363	254380	5366378	1%
37	1,358	254580	5366378	1%
38	1,357	255550	5365400	1%
39	1,349	254080	5366178	1%
40	1,340	254180	5365978	1%
41	1,323	254080	5366078	1%
42	1,296	254280	5366378	1%
43	1,292	254080	5366278	1%
44	1,280	254680	5366378	1%
45	1,267	254280	5365878	1%
46	1,266	253980	5366178	1%
47	1,251	254080	5365978	1%
48	1,245	253980	5366078	1%
49	1,219	253980	5366278	1%
50	1,215	254180	5366378	1%

Appendix E-6

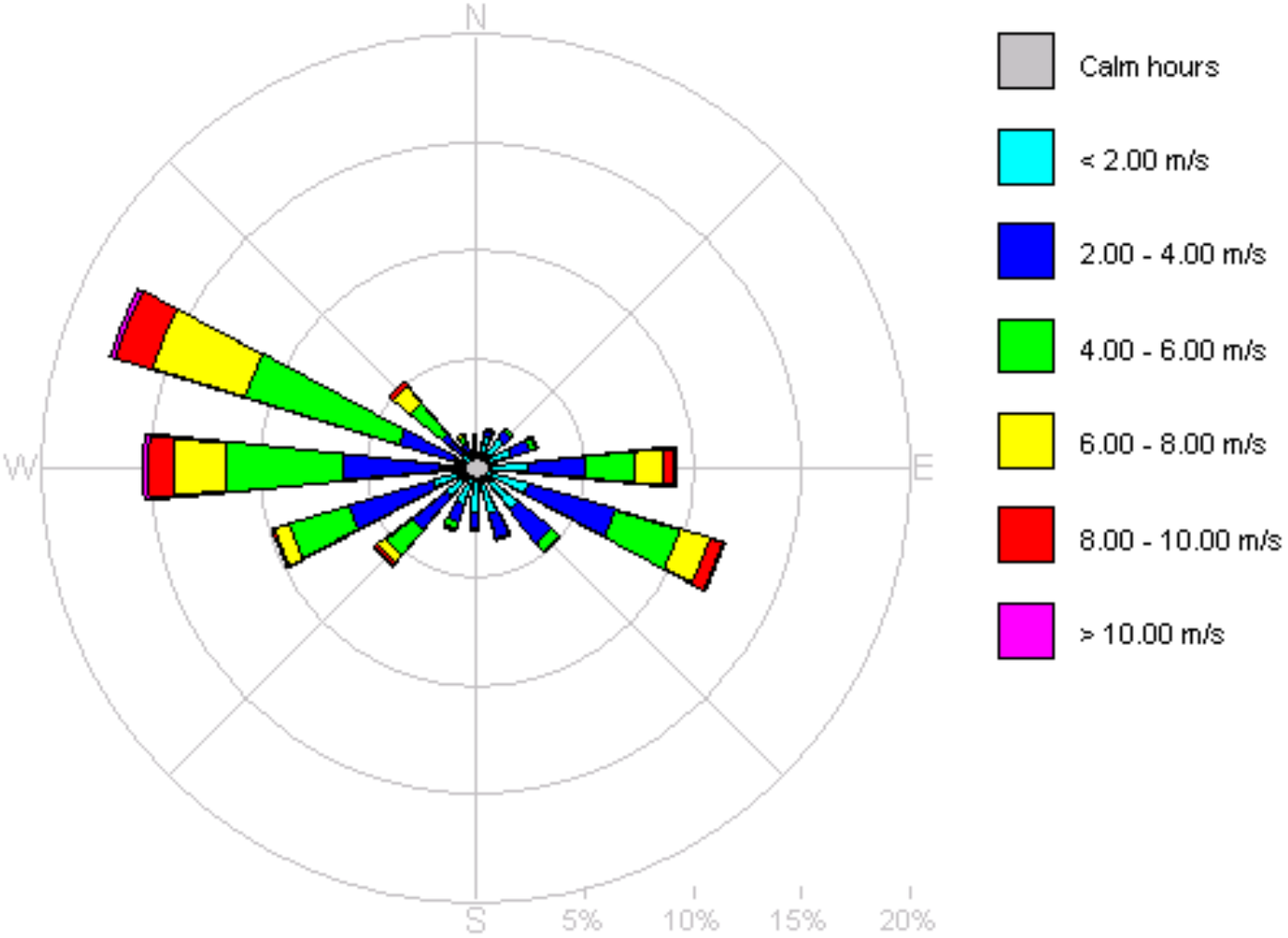
Wind Rose

Annexe E-6
Rose des vents - Jonquière 1996

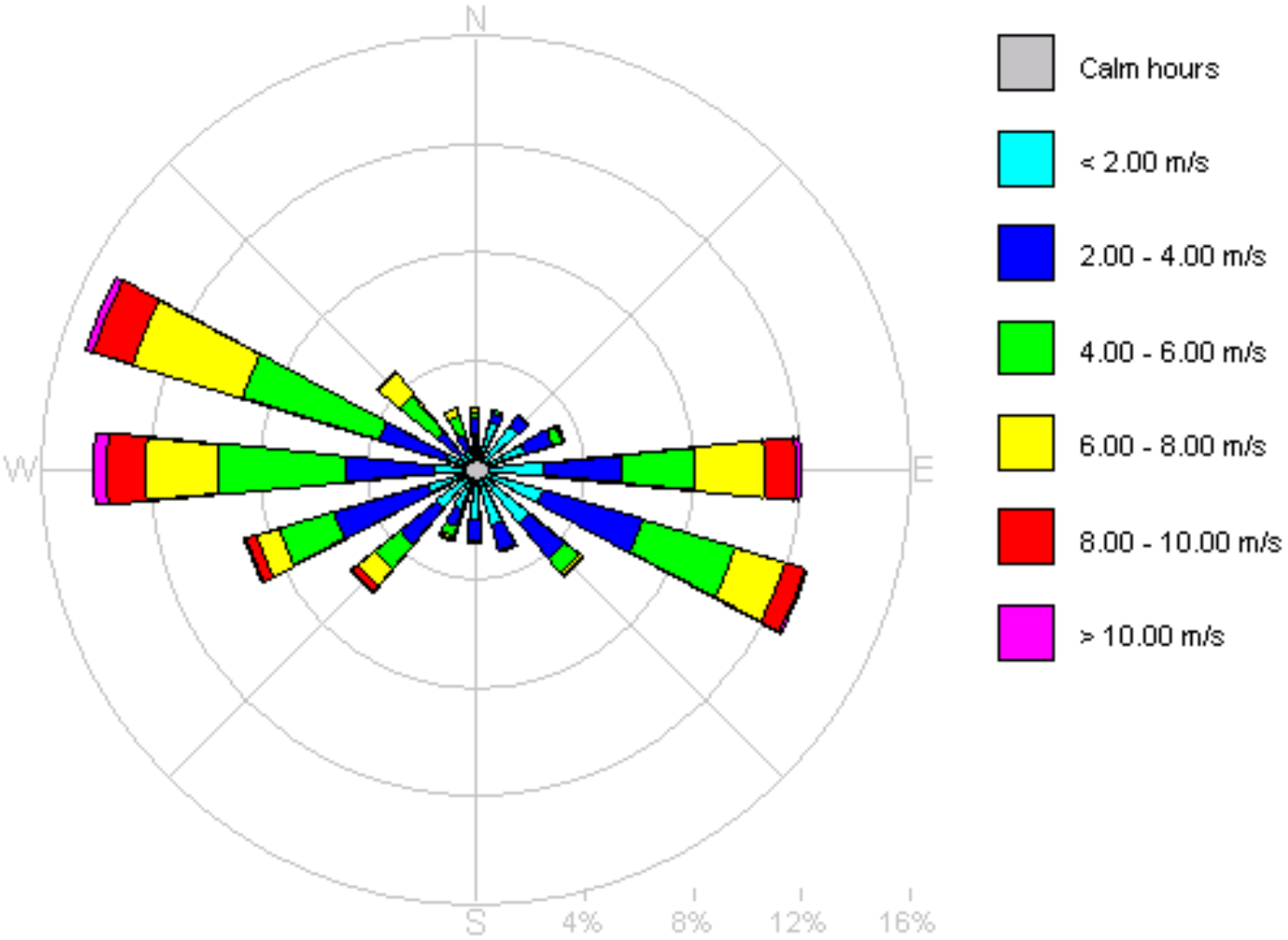


Annexe E-6

Rose des vents - Jonquière 1997

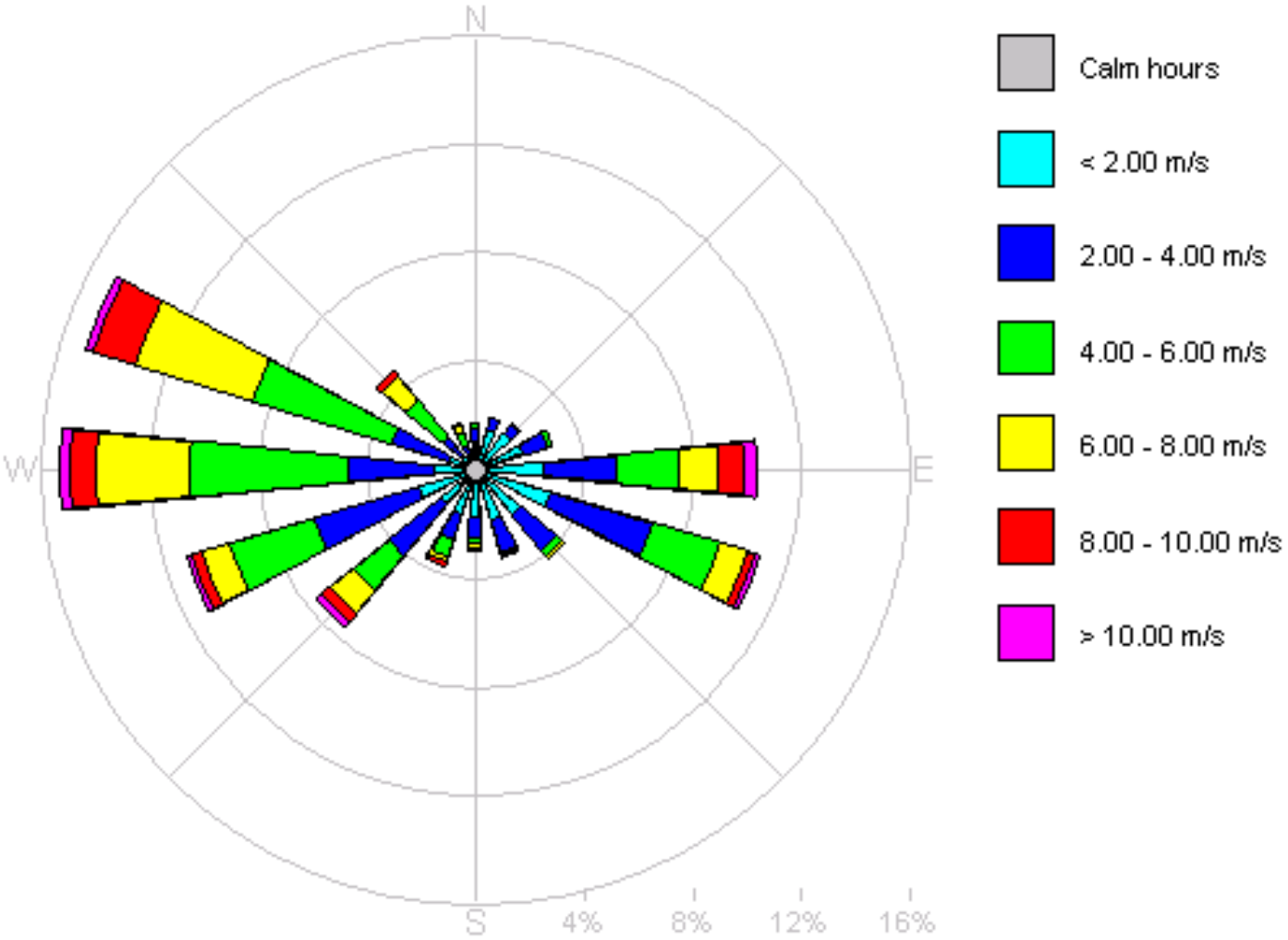


Annexe E-6
Rose des vents - Jonquière 1998



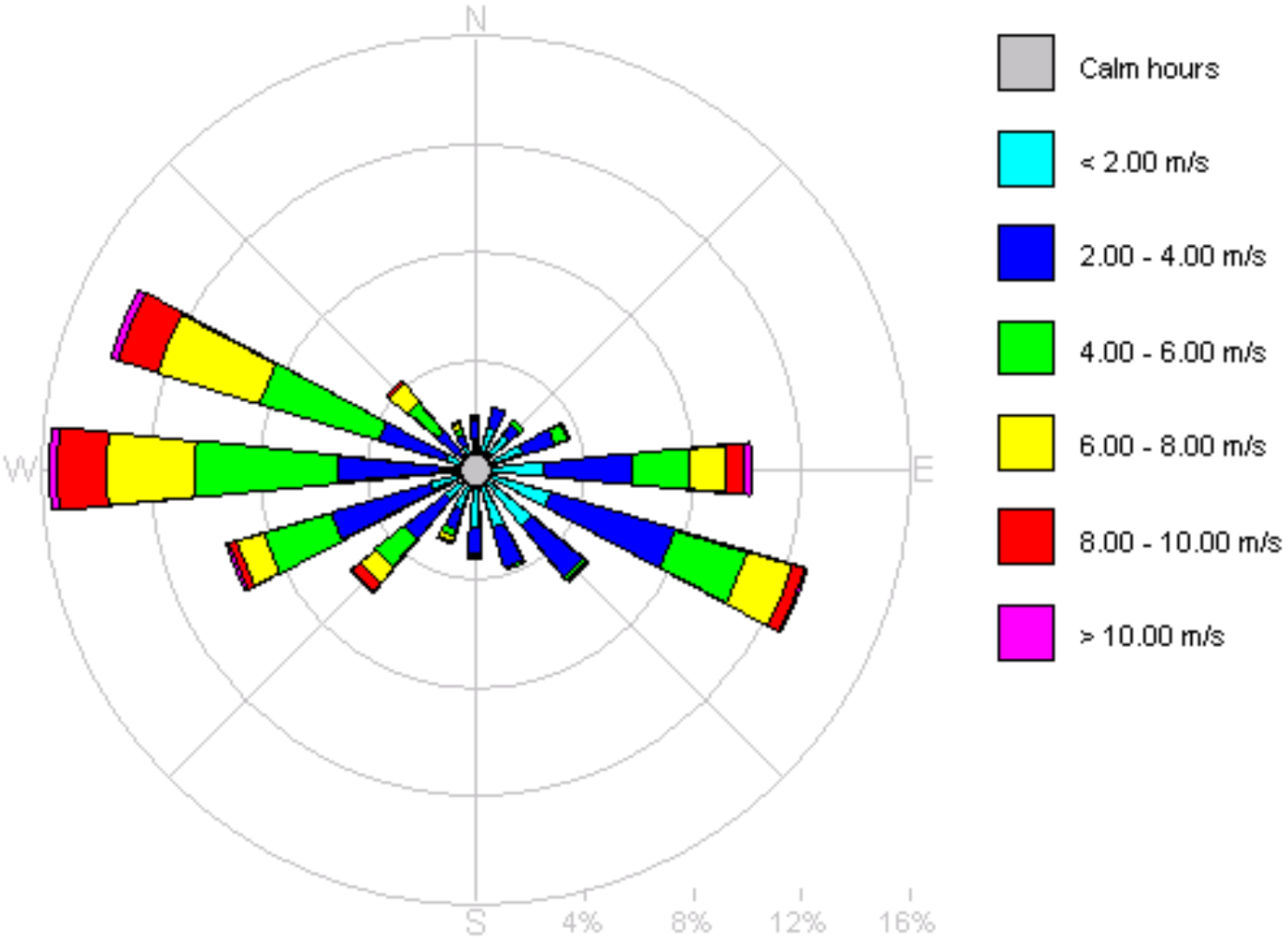
Annexe E-6

Rose des vents - Jonquière 1999



Annexe E-6

Rose des vents - Jonquière 2000



Correspondence Table for all five Wind Roses

Annexe	Appendix
Rose des vents	Wind Rose
m/s	m/s

APPENDIX F

Drawings of Atmospheric Emission Sources
- Plan View and Elevation Drawing

23511-006 100-C-110

NOTES GÉNÉRALES

DESSINS DE RÉFÉRENCE

TITRE	No. DESSIN

RESPONSABILITÉ CONTRACTUELLE

14 mai 2001	DOCUMENT DE POINTS D'EMISSION AJOUTÉES.				BH	AL
11 mai 2001	ÉMIS POUR ÉTUDE D'IMPACT.				BH	AL
No.	DATE	RÉVISION	PAR	VÉR. SUPV.	ING. PROJET	ING. CLIENT

ÉCHELLE 1:500 | CONCEPTION | DESSINÉ BD | VÉRIFIÉ

BECHTEL QUÉBEC LIMITÉE

ALCAN INC.
GROUPE MÉTAL PRIMAIRE

USINE DE TRAITEMENT
DE LA BRASQUE (UTB)

MISE À JOUR D'ÉTUDE – MARS 2000
PLAN DU SITE
ALTERNATIVE À L'INTÉRIEUR
DU COMPLEXE JONQUIÈRE

No. projet	No. dessin	Rév.
23511-006	100-C-110	B

FORMAT A1(841x594)

FICHIER: 006-100-C-110

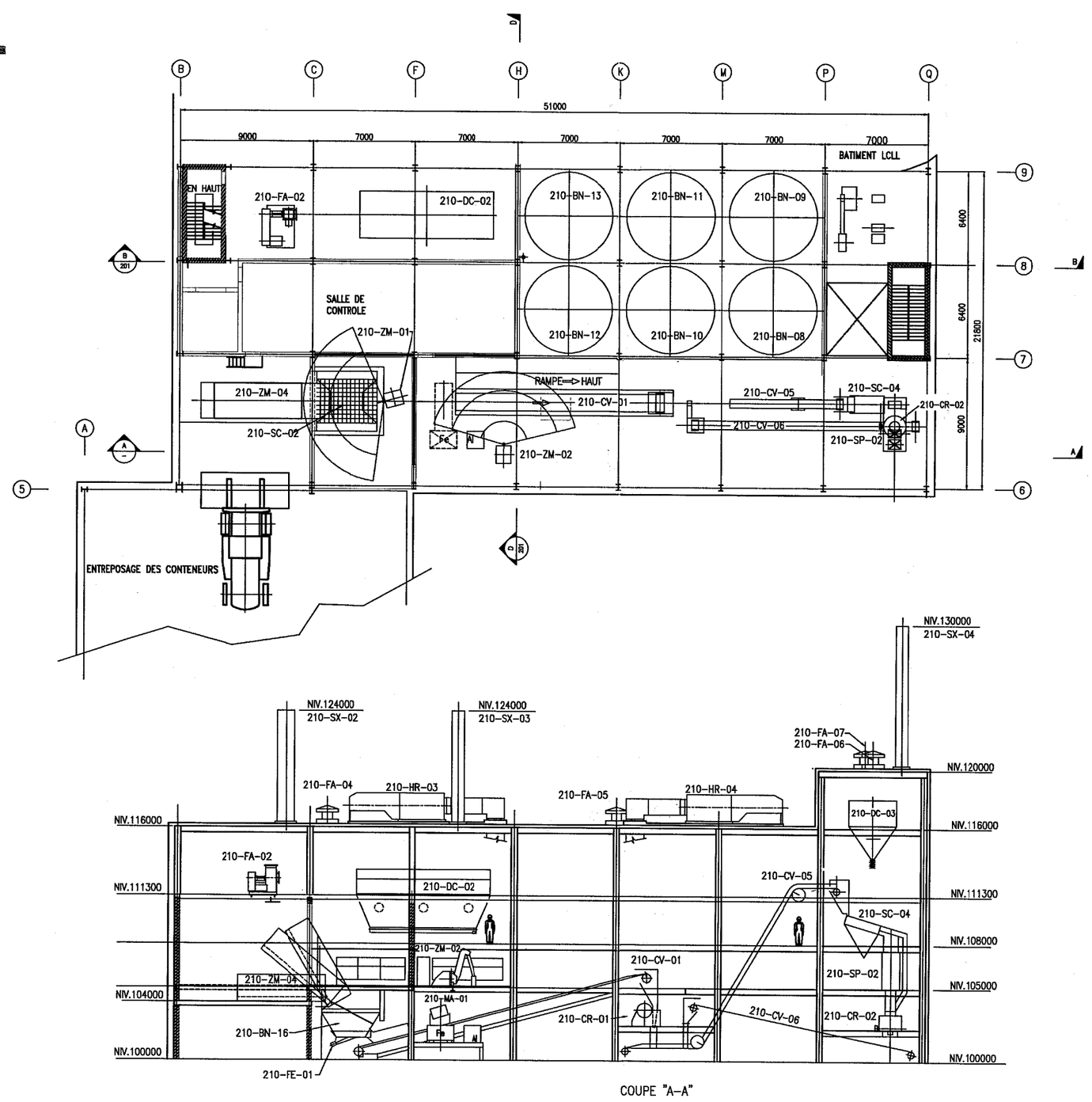
N:5365850
N:5365800
N:5365750
N:5365700
N:5365650
E:255850
E:255900
E:255950
E:256000
E:256050
E:256100
E:256150

RESSOURCERIE
442
309
308
304
305
305-B
306
306-A
310
310-A
310-B
310-D
320
322-C
322-D
322-E
322-F
322-G
319
319-A
318
608
608-A
7-F
QUAI DE BARILS

210-FA-04 N:5365761 E:255988
210-SX-02 N:5365750 E:255998
210-SX-03 N:5365746 E:255976
210-FA-05 N:5365732 E:255981
210-FA-06 N: 5365717 E: 255971
210-FA-07 N: 5365715 E:255979
210-SX-04 N: 5365712 E: 255980
300-FA-02 N:5365748 E:256006
320-SX-01 N: 5365736 E: 256004
300-FA-03 N: 5365733 E: 256000
300-FA-05 N:5365742 E:256022
330-SX-01 N:5365734 E:256051
380-CT-01 N:5365717 E:256064
350-FA-01 N:5365737 E:256020
300-FA-06 N:5365729 E:256016
300-FA-04 N:5365720 E:255995
380-SX-03 N: 5365728 E:256000
300-FA-07 N: 5365712 E: 256009

Appendix F-1 – Correspondence Table

Notes générales	General Notes
Dessins de référence	Reference drawings
Titre	Title
No. Dessin	Drawing #
Responsabilité contractuelle	Contracting responsibility
Coordonnées de points d'émission ajoutées	Added Coordinates for Emission Sources
Émis pour étude d'impact	Issued for impact study
Révision	Revision
Échelle	Scale
Par	By
Vér.	Ver.
Supv.	Supv.
Ing.	Eng.
Client	Client
Conception	Design
Dessiné	Drawn by
Vérifié	Verified
Bechtel Québec Limitée	Bechtel Quebec Limited
Alcan Inc.	Alcan Inc.
Groupe métal primaire	Primary Metal group
Usine de traitement de la Brasque (UTB)	Pot Lining Processing Plant (PLPP)
Mise à jour d'étude – Mars 2000 Plan du site	Study Update – March 2000 Site Plan
Alternative à l'intérieur du Complexe Jonquière	Alternative inside the Jonquière Complex
No. Projet No. Dessin	Project # Drawing #
Rév.	Rev.
Cheminées ajoutées	Added chimneys
Émis pour étude d'impact	Issued for impact study
Émis pour étude d'impact sur l'environnement	Issued for environmental impact study
Émis pour rapport d'impact	Issued for impact report
Atelier de concassage	Breaking Workshop
Arrangement général	General layout
Vue en plan et coupe	Plan view and Cross-sectional drawing
Bâtiment LCLL	LCLL building
Coupe	Cross section
Ressourcerie	Waste sorting and recovery centre



COUPE "A-A"

NOTES GÉNÉRALES

DESSINS DE RÉFÉRENCE

TITRE	No. DESSIN

RESPONSABILITÉ CONTRACTUELLE

No.	DATE	RÉVISION	PAR	VÉR.	SUPV.	ING.	RÉS. CLIENT
2	00 mai 2000	CHEMINÉES AJOUTÉES ÉMIS POUR ÉTUDE D'IMPACT				BH	AL
1	00 FÉV. 2000	ÉMIS POUR L'ÉTUDE D'IMPACT SUR L'ENVIRONNEMENT				GD	JV
0	99MARS00	ÉMIS POUR RAPPORT D'ÉTUDE				GD	RIM

ÉCHELLE 1:150 | CONCEPTION | DESSINÉ RD | VÉRIFIÉ

BECHTEL QUÉBEC LIMITÉE

ALCAN INC.
GROUPE MÉTAL PRIMAIRE

USINE DE TRAITEMENT
DE LA BRASQUE (UTB)

MISE À JOUR D'ÉTUDE – MARS 2000
ATELIER DE CONCASSAGE
ARRANGEMENT GÉNÉRAL
VUE EN PLAN ET COUPE A-A

No. projet	No. dessin	Rév.
23511-006	200-M-200	C

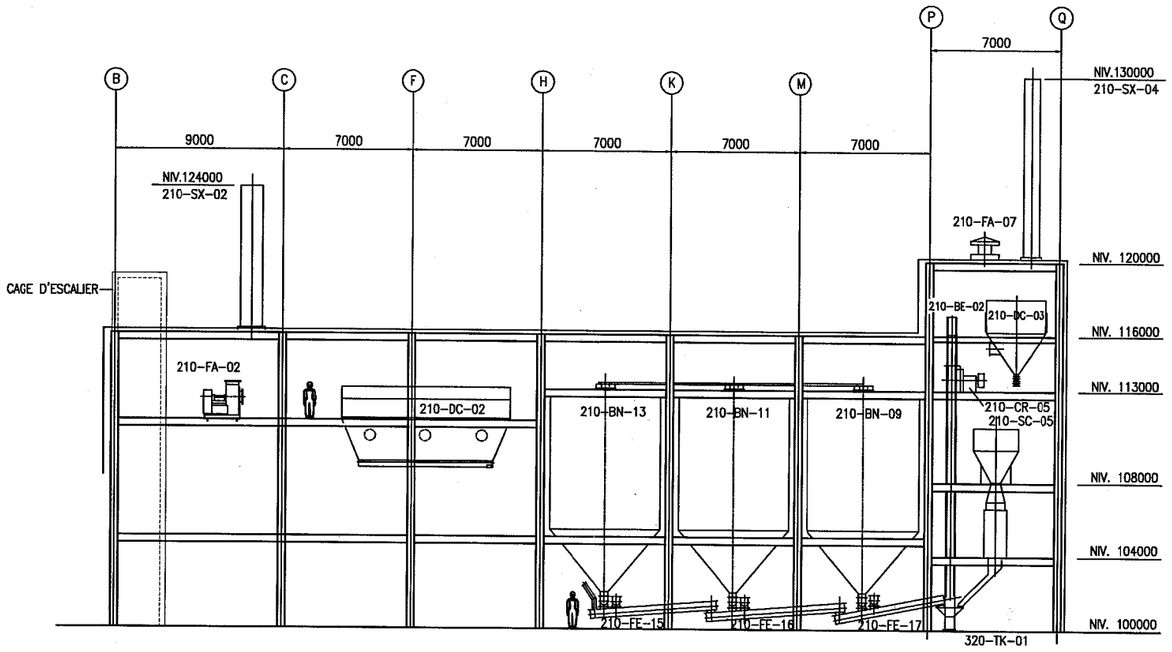
ROMER

FORMAT A1(841x594)

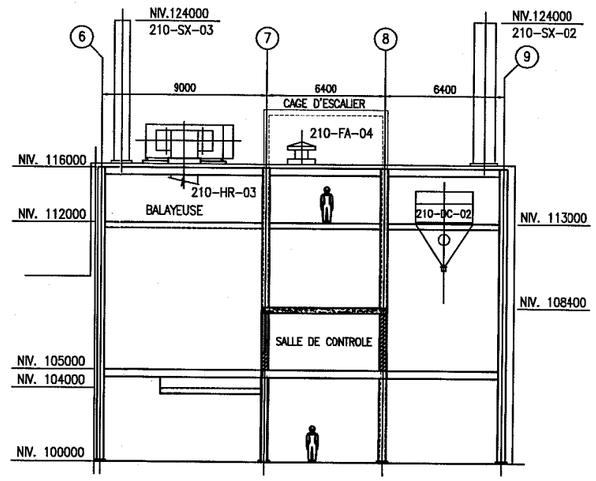
Appendix F-2 – Correspondence Table

Notes générales	General Notes
Dessins de référence	Reference drawings
Titre	Title
No. Dessin	Drawing #
Responsabilité contractuelle	Contracting responsibility
Coordonnées de points d'émission ajoutées	Added Coordinates for Emission Sources
Émis pour étude d'impact	Issued for impact study
Révision	Revision
Échelle	Scale
Par	By
Vér.	Ver.
Supv.	Supv.
Ing.	Eng.
Client	Client
Conception	Design
Dessiné	Drawn by
Vérifié	Verified
Bechtel Québec Limitée	Bechtel Quebec Limited
Alcan Inc.	Alcan Inc.
Groupe métal primaire	Primary Metal group
Usine de traitement de la Brasque (UTB)	Pot Lining Processing Plant (PLPP)
Mise à jour d'étude – Mars 2000 Plan du site	Study Update – March 2000 Site Plan
Alternative à l'intérieur du Complexe Jonquière	Alternative inside the Jonquière Complex
No. Projet No. Dessin	Project # Drawing #
Rév.	Rev.
Cheminées ajoutées	Added chimneys
Émis pour étude d'impact	Issued for impact study
Émis pour étude d'impact sur l'environnement	Issued for environmental impact study
Émis pour rapport d'impact	Issued for impact report
Atelier de concassage	Breaking Workshop
Arrangement général	General layout
Vue en plan et coupe	Plan view and Cross-sectional drawing
Bâtiment LCLL	LCLL building
Coupe	Cross section
Entreposage des conteneurs	Container storage
Salle de contrôle	Control room
Rampe - Haut	Ramp - top

23511-006 200-M-201



COUPE "B-B"
200-M-200



COUPE "D-D"
200-M-200

NOTES GÉNÉRALES

DESSINS DE RÉFÉRENCE

TITRE	No. DESSIN

RESPONSABILITÉ CONTRACTUELLE

No.	DATE	RÉVISION	PAR	VÉR. SUPV	ING.	RES. CLIENT
16 mai 2000		CHERRIES AJOUTÉES ÉMIS POUR ÉTUDE D'IMPACT			BH	AL
B3 FÉV. 2000		ÉMIS POUR L'ÉTUDE D'IMPACT SUR L'ENVIRONNEMENT			GD	JW
A 29 NOVEMBRE 1999		ÉMIS POUR RAPPORT D'ÉTUDE			GD	RM

ÉCHELLE 1:150 | CONCEPTION | DESSINÉ | VÉRIFIÉ

BECHTEL QUÉBEC LIMITÉE

ALCAN INC.
GROUPE MÉTAL PRIMAIRE

USINE DE TRAITEMENT
DE LA BRASQUE (UTB)

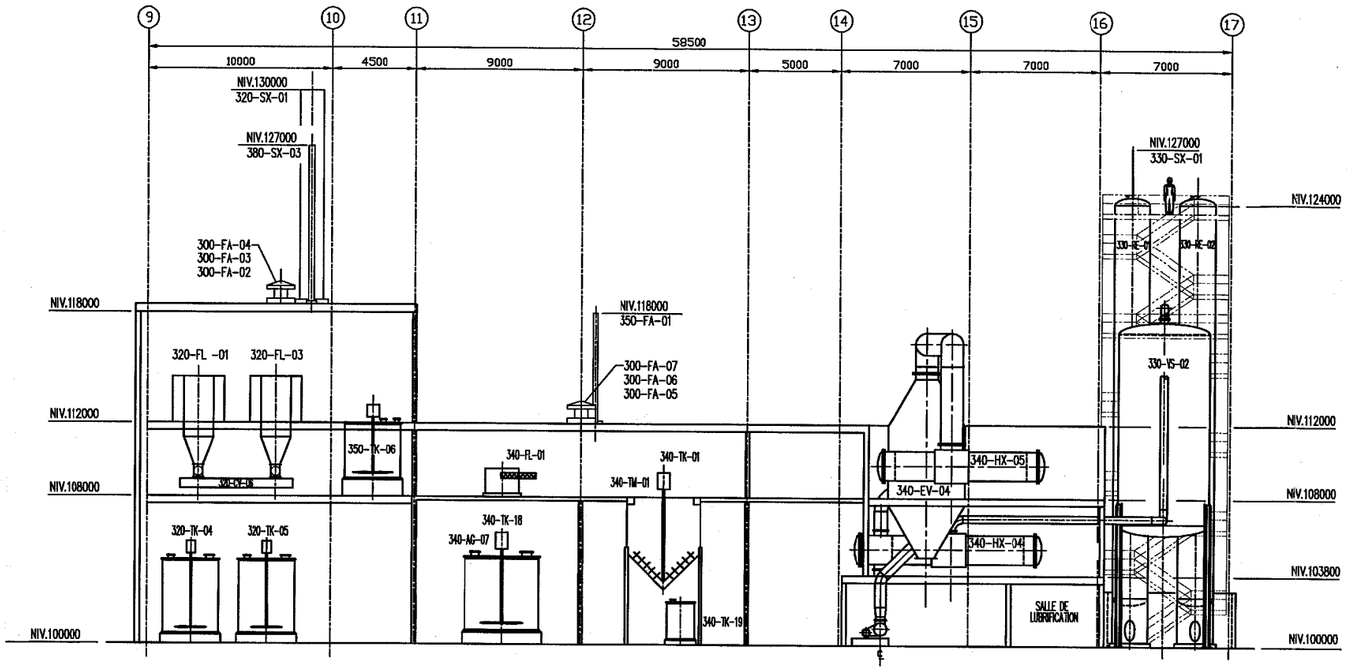
MISE À JOUR D'ÉTUDE - MARS 2000
ATELIER DE CONCASSAGE
ARRANGEMENT GÉNÉRAL
COUPES B-B ET D-D

No. projet	No. dessin	Rév.
23511-006	200-M-201	C

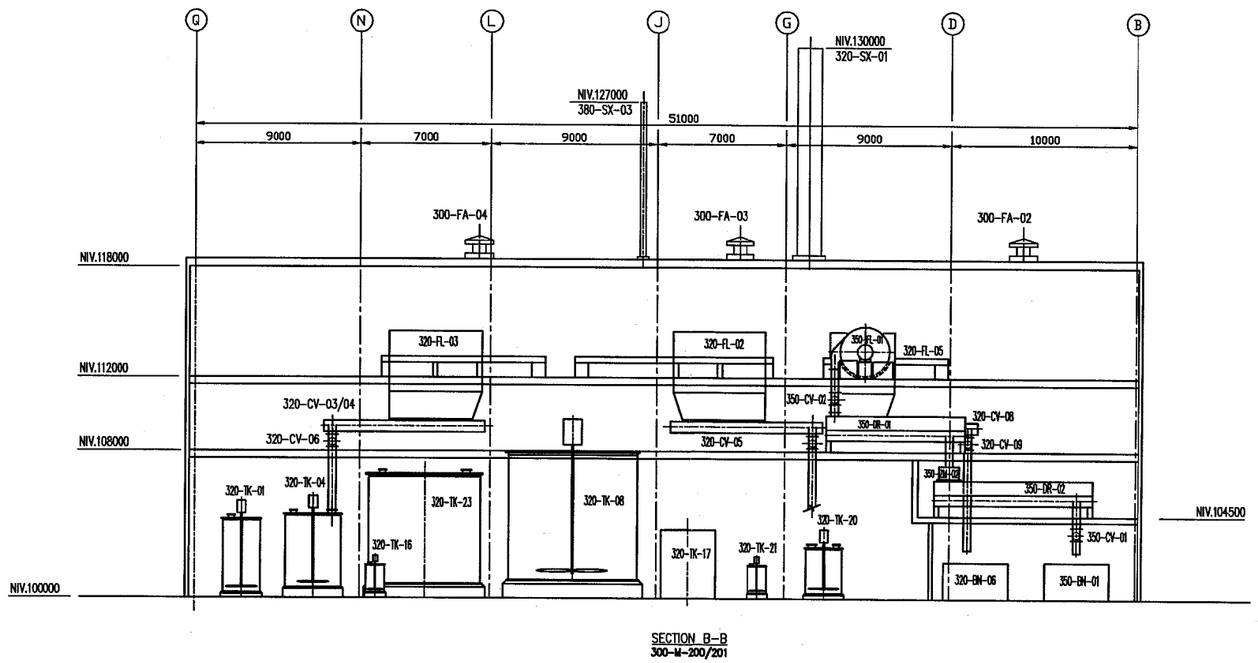
FICHIER:

Appendix F-3 – Correspondence Table

Notes générales	General Notes
Dessins de référence	Reference drawings
Titre	Title
No. Dessin	Drawing #
Responsabilité contractuelle	Contracting responsibility
Coordonnées de points d'émission ajoutées	Added Coordinates for Emission Sources
Émis pour étude d'impact	Issued for impact study
Révision	Revision
Échelle	Scale
Par	By
Vér.	Ver.
Supv.	Supv.
Ing.	Eng.
Client	Client
Conception	Design
Dessiné	Drawn by
Vérifié	Verified
Bechtel Québec Limitée	Bechtel Quebec Limited
Alcan Inc.	Alcan Inc.
Groupe métal primaire	Primary Metal group
Usine de traitement de la Brasque (UTB)	Pot Lining Processing Plant (PLPP)
Mise à jour d'étude – Mars 2000 Plan du site	Study Update – March 2000 Site Plan
Alternative à l'intérieur du Complexe Jonquière	Alternative inside the Jonquière Complex
No. Projet No. Dessin	Project # Drawing #
Rév.	Rev.
Cheminées ajoutées	Added chimneys
Émis pour étude d'impact	Issued for impact study
Émis pour étude d'impact sur l'environnement	Issued for environmental impact study
Émis pour rapport d'impact	Issued for impact report
Atelier de concassage	Breaking Workshop
Arrangement général	General layout
Vue en plan et coupe	Plan view and Cross-sectional drawing
Bâtiment LCLL	LCLL building
Coupe	Cross section
Cage d'escalier	Staircase
Balayeuse	Vacuum
Salle de contrôle	Control room



SECTION A–A
300-M-200/201



SECTION B–B
300-M-200/201

NOTES GÉNÉRALES

DESSINS DE RÉFÉRENCE

TITRE	No. DESSIN

RESPONSABILITÉ CONTRACTUELLE

No.	DATE	RÉVISION	PAR	VÉR. SUPV.	ING. PROJET	CHEF DE GROUPE
4	mai 2000	370-FA-01&370-BN-01 ENLEVÉS CHEMINÉES AJOUTÉES			BH	AL
3	FÉV. 2000	ÉMIS POUR ÉTUDE D'IMPACT.				
2		ÉMIS POUR L'ÉTUDE D'IMPACT SUR L'ENVIRONNEMENT			GD	JV
1	MARS 2000	ÉMIS POUR RAPPORT D'ÉTUDE			GD	RIM

ÉCHELLE 1:150 | CONCEPTION | DESSINÉ RD | VÉRIFIÉ

BECHTEL QUÉBEC LIMITÉE

ALCAN INC.
GROUPE MÉTAL PRIMAIRE

USINE DE TRAITEMENT
DE LA BRASQUE (UTB)

MISE À JOUR D'ÉTUDE – MARS 2000
BATIMENT LCLL
ARRANGEMENT GÉNÉRAL
COUPES A–A ET B–B

No. projet	No. dessin	Rév.
23511-006	300-M-203	C

FORMAT A1(841x594)

NUMÉRO 006-300-M-203

Appendix F-4 – Correspondence Table

Notes générales	General Notes
Dessins de référence	Reference drawings
Titre	Title
No. Dessin	Drawing #
Responsabilité contractuelle	Contracting responsibility
Coordonnées de points d'émission ajoutées	Added Coordinates for Emission Sources
Émis pour étude d'impact	Issued for impact study
Révision	Revision
Échelle	Scale
Par	By
Vér.	Ver.
Supv.	Supv.
Ing.	Eng.
Client	Client
Conception	Design
Dessiné	Drawn by
Vérifié	Verified
Bechtel Québec Limitée	Bechtel Quebec Limited
Alcan Inc.	Alcan Inc.
Groupe métal primaire	Primary Metal group
Usine de traitement de la Brasque (UTB)	Pot Lining Processing Plant (PLPP)
Mise à jour d'étude – Mars 2000 Plan du site	Study Update – March 2000 Site Plan
Alternative à l'intérieur du Complexe Jonquière	Alternative inside the Jonquière Complex
No. Projet No. Dessin	Project # Drawing #
Rév.	Rev.
Cheminées ajoutées	Added chimneys
Émis pour étude d'impact	Issued for impact study
Émis pour étude d'impact sur l'environnement	Issued for environmental impact study
Émis pour rapport d'impact	Issued for impact report
Atelier de concassage	Breaking Workshop
Arrangement général	General layout
Vue en plan et coupe	Plan view and Cross-sectional drawing
Bâtiment LCLL	LCLL building
Coupe	Cross section
Salle de lubrification	Lubrication room