

# HOWTO: Draft 2019 OGV Inventory Model

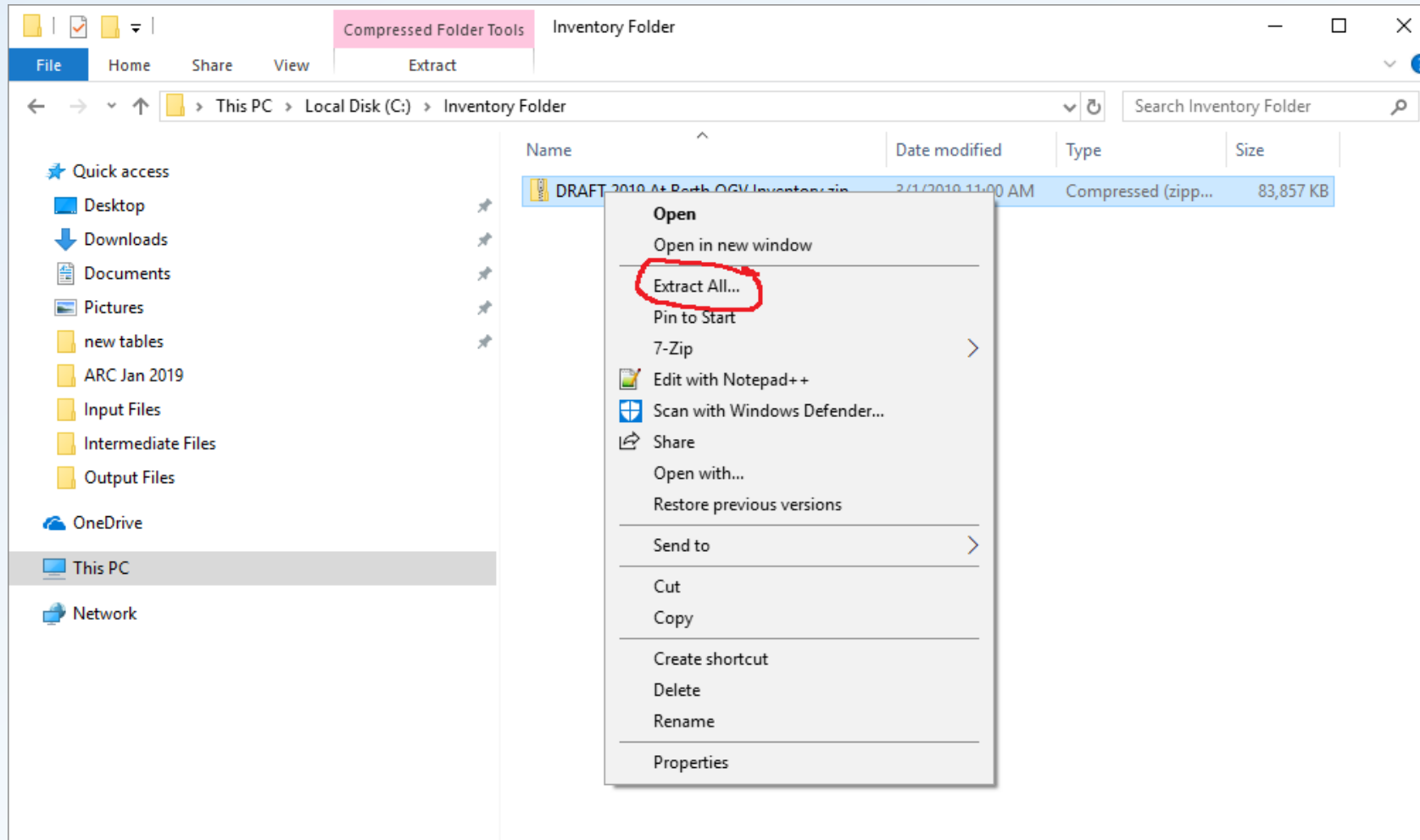
This short HOWTO presentation will cover downloading and running the Draft 2019 OGV Inventory Model, viewing the results and the input files for the model.

vers. March 1, 2019

## 2. Download Model Zip file

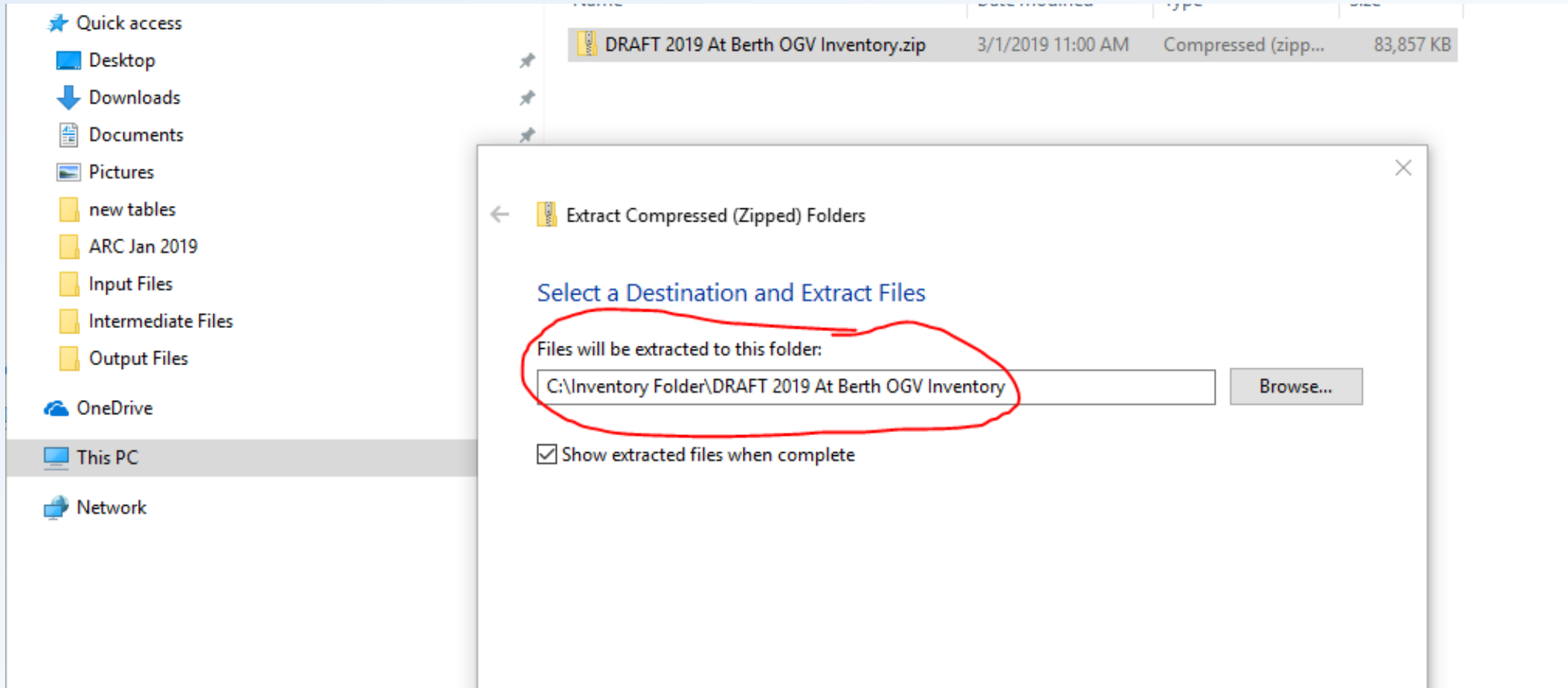
- Visit <https://www.arb.ca.gov/msei/ordiesel.htm>
- Scroll down to Ocean Going Vessels
- Select Draft 2019 Ocean Going Vessel Inventory Model Zip File

# 3. Extract Zip File

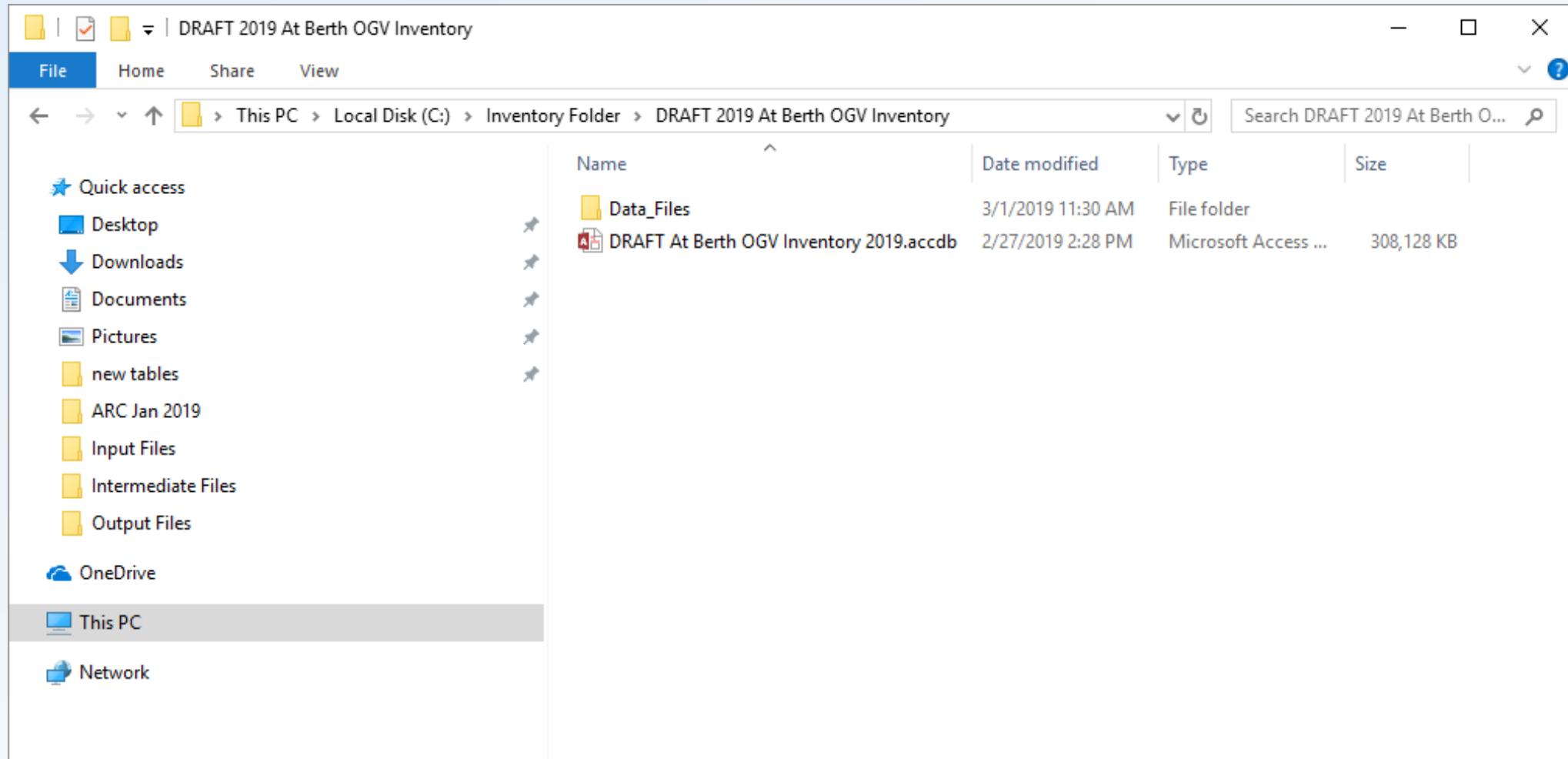


# 3. Select a destination folder

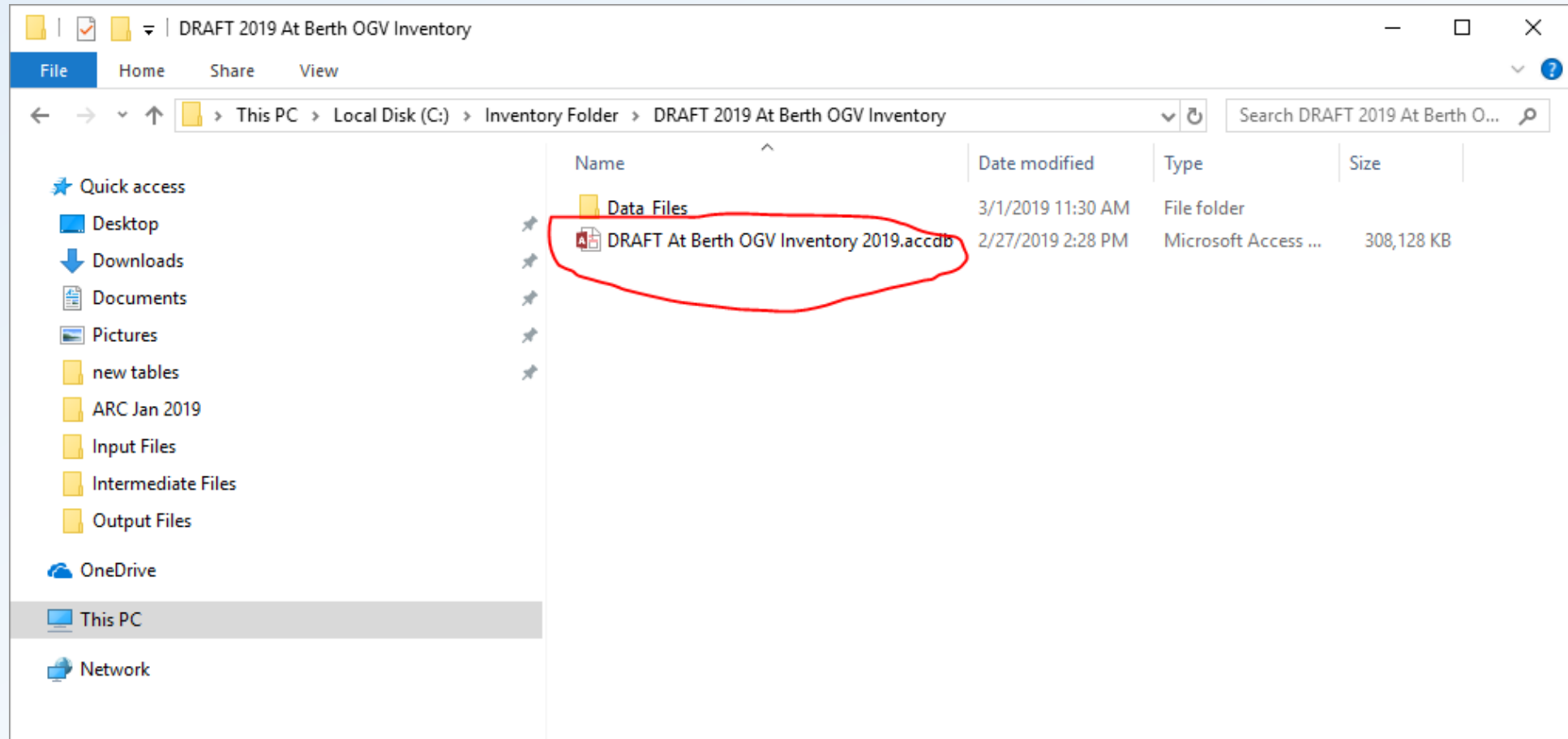
(Make sure extraction is to a folder you have administrative rights to)



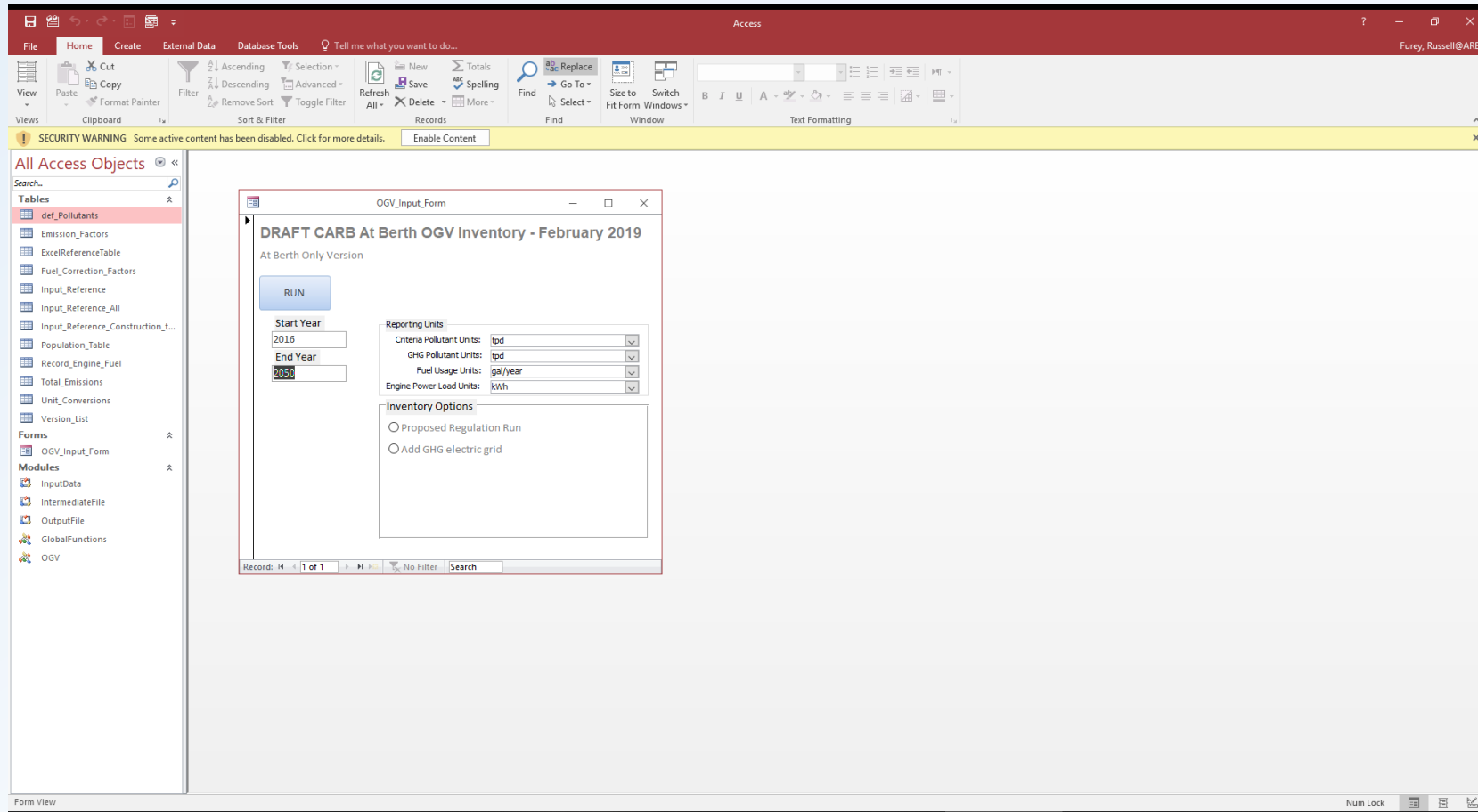
# 5. Open model folder



# 6. Open model database



# 7. Opened model database



# 8. Enable Content

The screenshot displays the Microsoft Access interface. At the top, a yellow security warning banner reads: "SECURITY WARNING Some active content has been disabled. Click for more details." A red circle highlights the "Enable Content" button on the right side of this banner. The ribbon menu includes "File", "Home", "Create", "External Data", and "Database Tools". The "Records" tab is active, showing options like "New", "Save", "Delete", "Find", and "Replace".

On the left, the "All Access Objects" pane shows a tree view with categories: "Tables" (including def\_Pollutants, Emission\_Factors, ExcelReferenceTable, Fuel\_Correction\_Factors, Input\_Reference, Input\_Reference\_All, Input\_Reference\_Construction\_T..., Population\_Table, Record\_Engine\_Fuel, Total\_Emissions, Unit\_Conversions, Version\_List), "Forms" (OGV\_Input\_Form), and "Modules" (InputData, IntermediateFile, OutputFile, GlobalFunctions, OGV).

The main window displays a form titled "OGV\_Input\_Form" with the following content:

- DRAFT CARB At Berth OGV Inventory - February 2019**
- At Berth Only Version
- RUN** button
- Start Year**: 2016
- End Year**: 2050
- Reporting Units**:
  - Criteria Pollutant Units: tpd
  - GHG Pollutant Units: tpd
  - Fuel Usage Units: gal/year
  - Engine Power Load Units: kWh
- Inventory Options**:
  - Proposed Regulation Run
  - Add GHG electric grid

At the bottom of the form, it shows "Records: 1 of 1" and "No Filter".



# 9. Select model run options

The screenshot shows a web application window titled "OGV\_Input\_Form". The main heading is "DRAFT CARB At Berth OGV Inventory - February 2019" with a subtitle "At Berth Only Version". A blue "RUN" button is located on the left. Below it are two input fields: "Start Year" with the value "2016" and "End Year" with the value "2050". To the right, under the "Reporting Units" section, there are four dropdown menus: "Criteria Pollutant Units" (tpd), "GHG Pollutant Units" (tpd), "Fuel Usage Units" (gal/year), and "Engine Power Load Units" (kWh). Below this is the "Inventory Options" section with two radio buttons: "Proposed Regulation Run" and "Add GHG electric grid". A red circle highlights the "Start Year", "End Year", and "Reporting Units" sections. At the bottom, there is a status bar with "Record: 1 of 1", "No Filter", and a "Search" input field.

OGV\_Input\_Form

**DRAFT CARB At Berth OGV Inventory - February 2019**  
At Berth Only Version

RUN

Start Year  
2016

End Year  
2050

Reporting Units

Criteria Pollutant Units: tpd

GHG Pollutant Units: tpd

Fuel Usage Units: gal/year

Engine Power Load Units: kWh

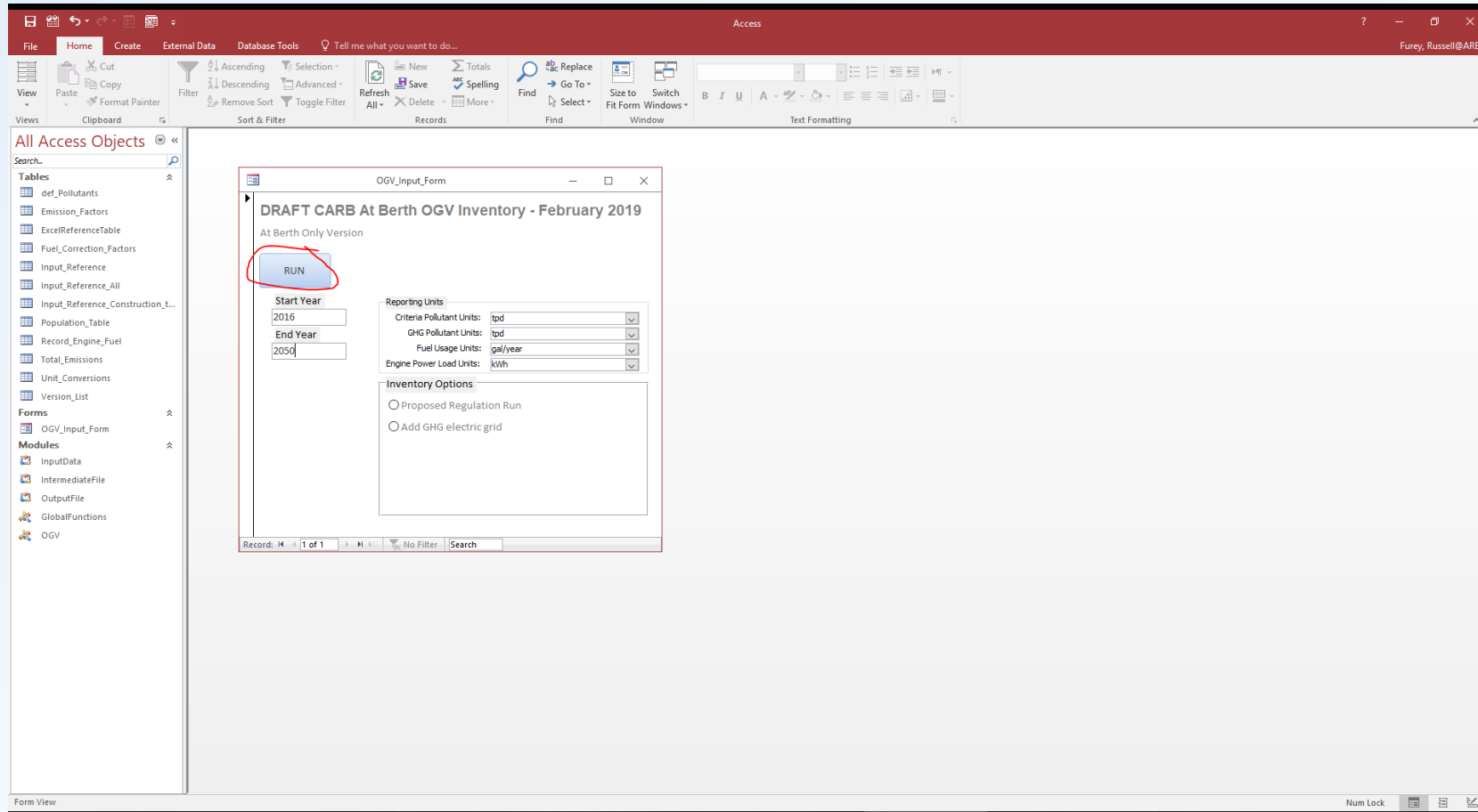
Inventory Options

Proposed Regulation Run

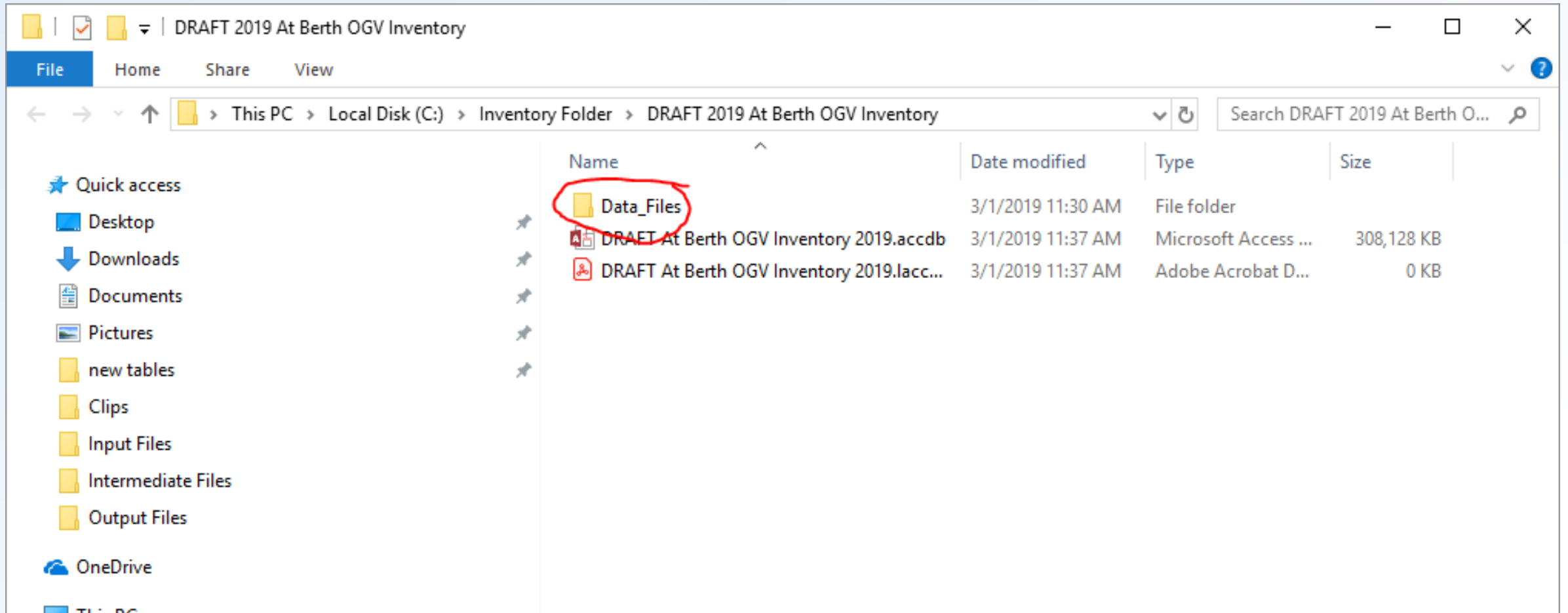
Add GHG electric grid

Record: 1 of 1 No Filter Search

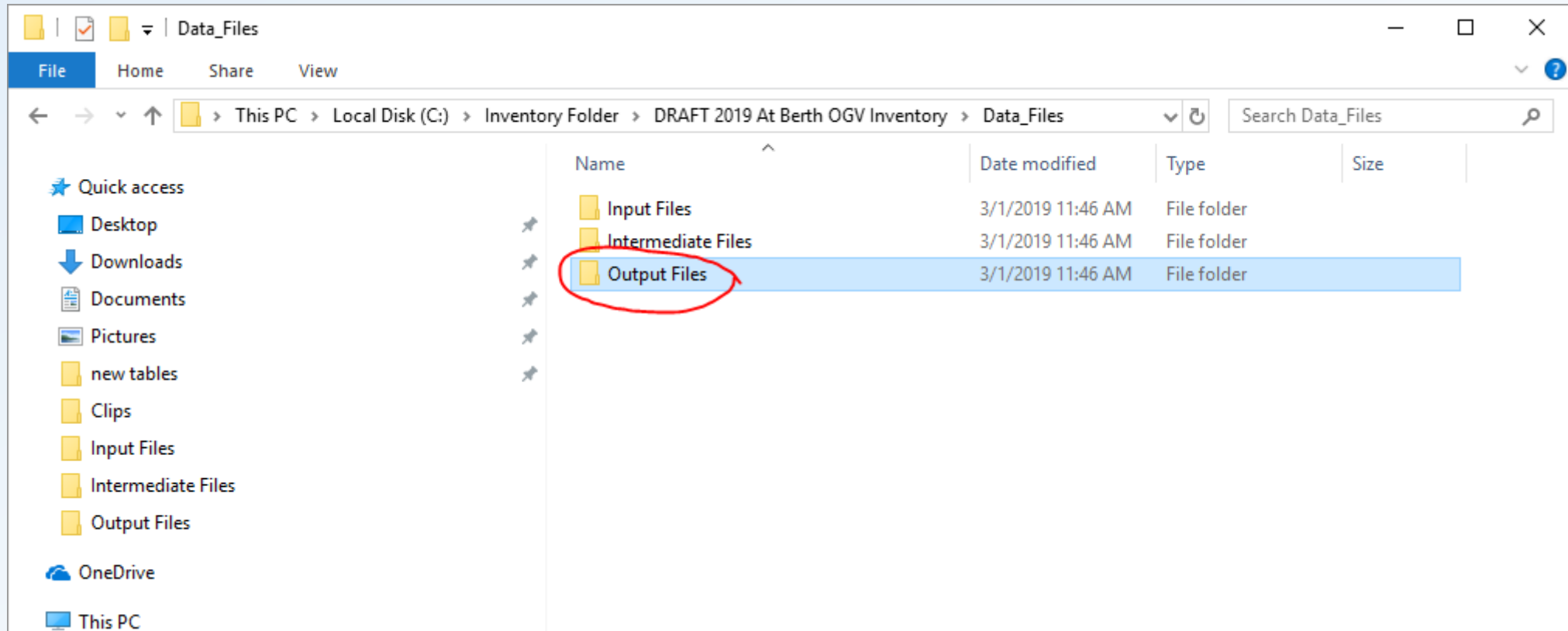
# 10. Select the run button



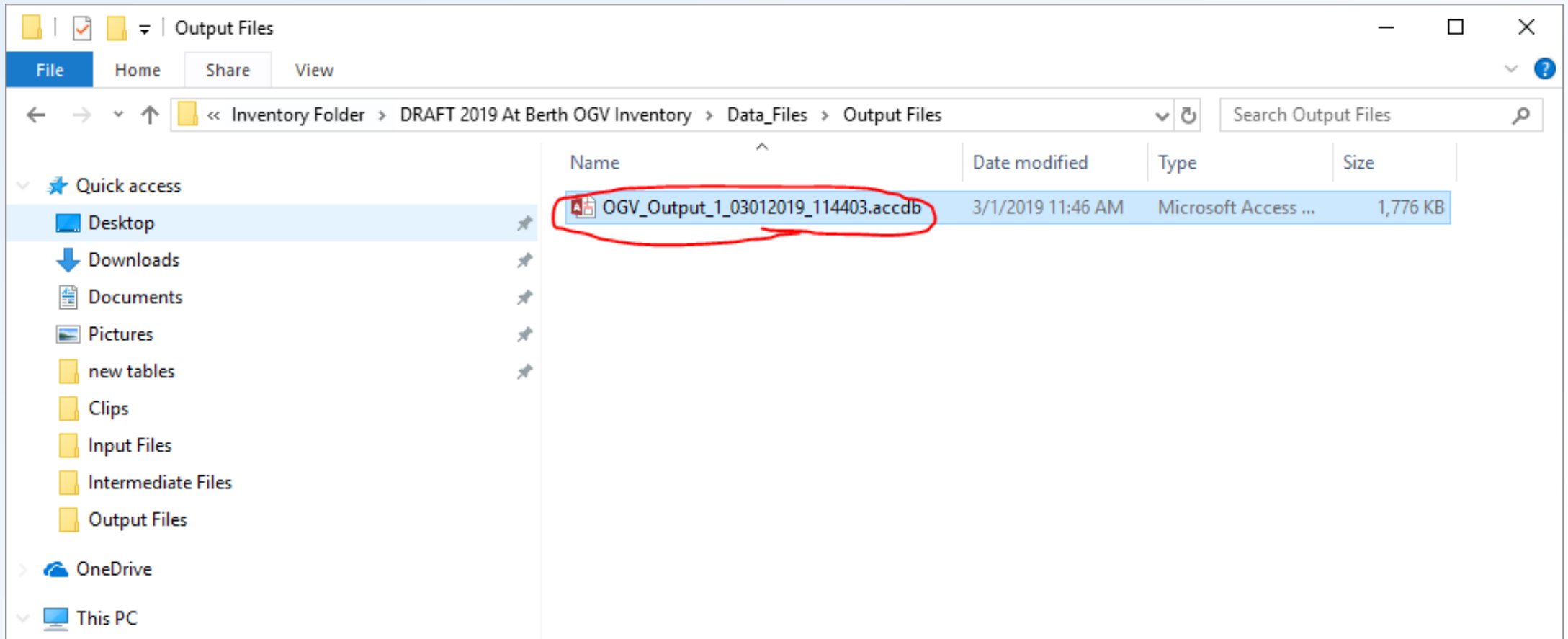
# 11. When the model is done running, open data files folder.



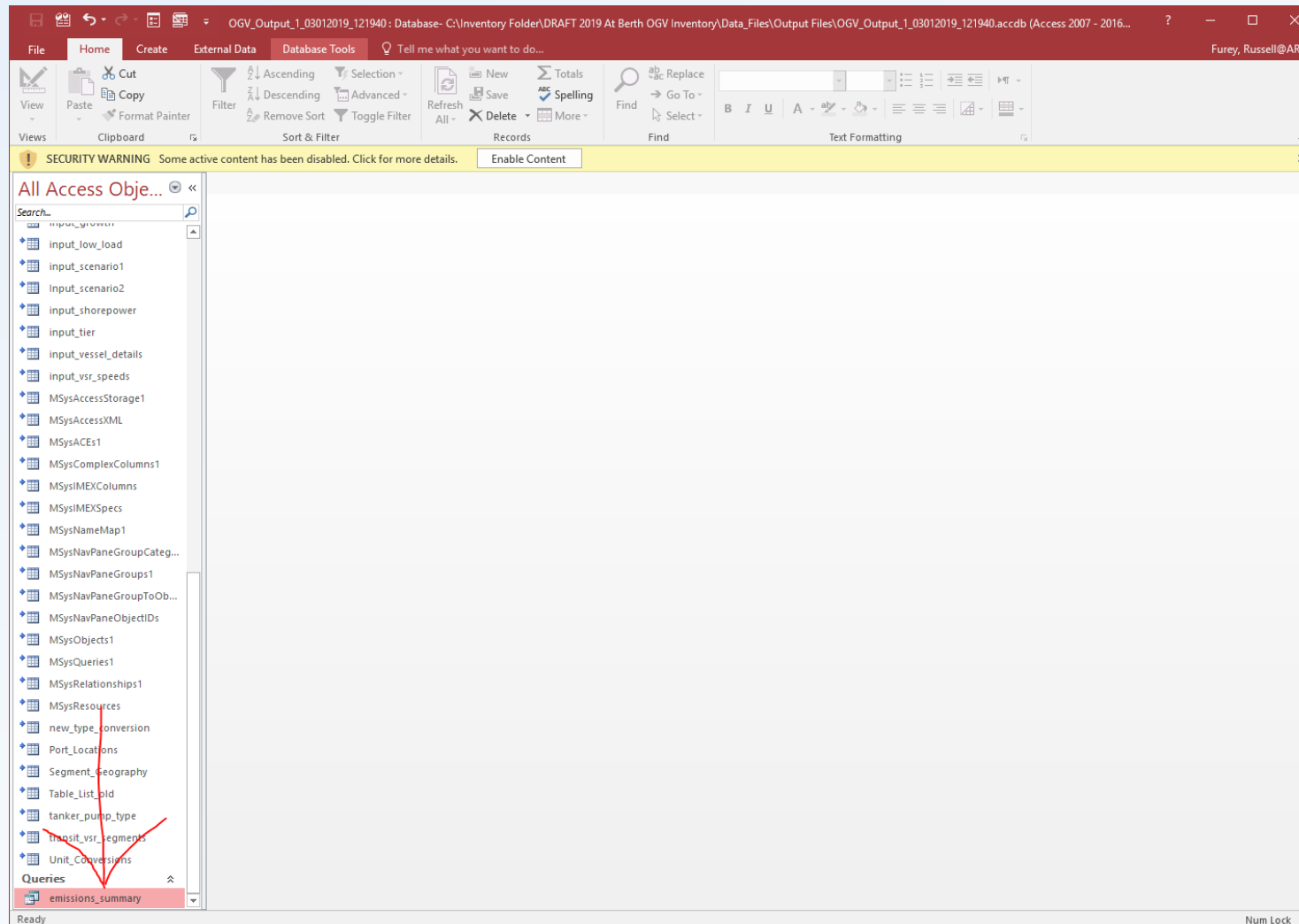
# 12. Open output files location



# 13. Open latest “OGV\_Output” file

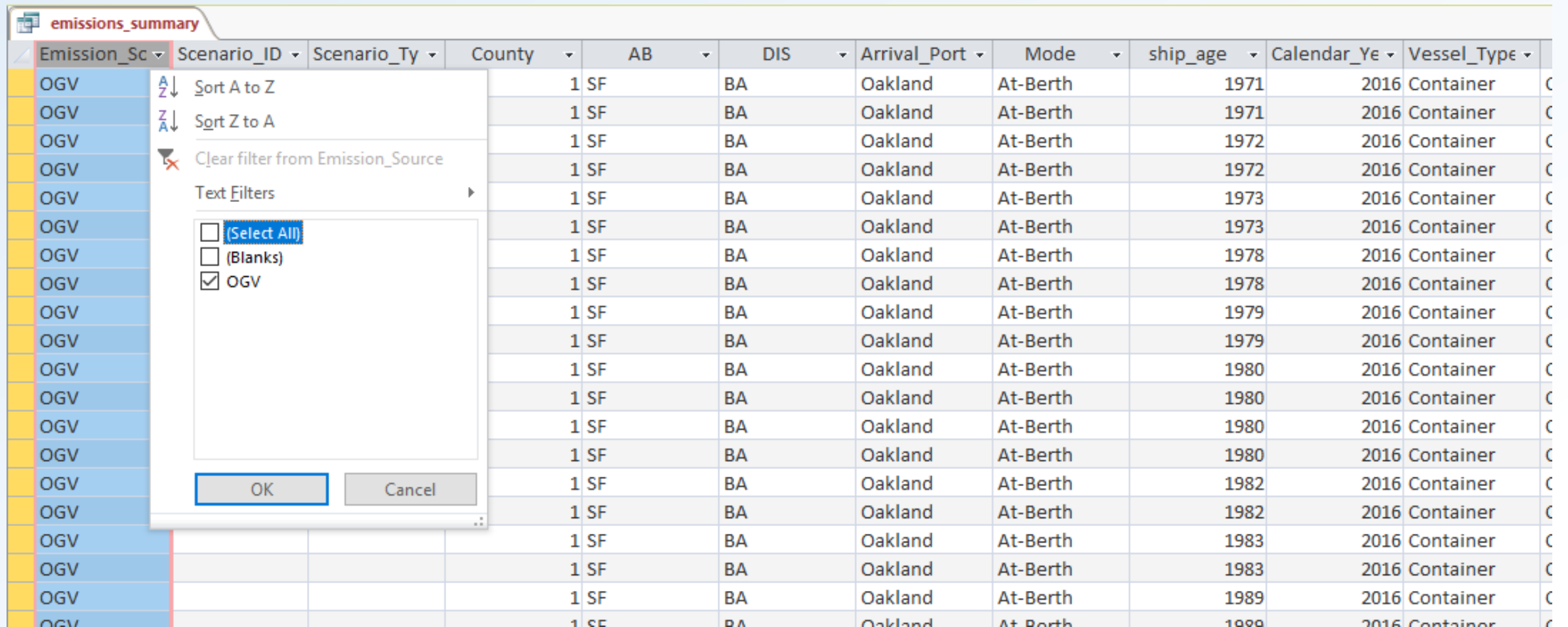


# 14. Model results within “emissions\_summary” query



15. To select OGV emissions, do the following:

# 14.A Select OGV from “Emissions\_Source” field



The image shows a data table with a filter dialog box open over the 'Emission\_Source' column. The dialog box has the following options:

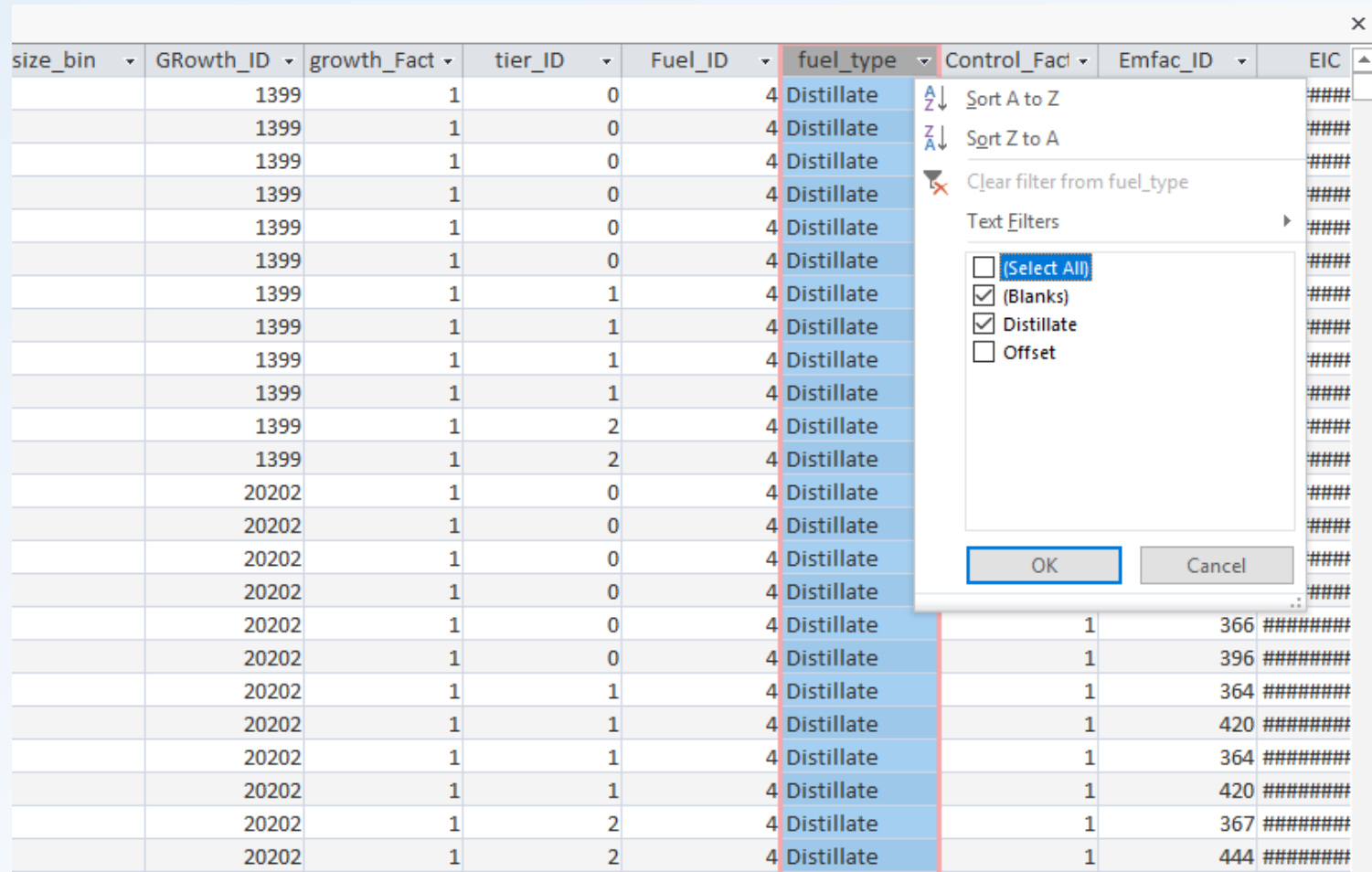
- Sort A to Z
- Sort Z to A
- Clear filter from Emission\_Source
- Text Filters
  - (Select All)
  - (Blanks)
  - OGV
- OK button
- Cancel button

The table data is as follows:

Emission_Source	Scenario_ID	Scenario_Ty	County	AB	DIS	Arrival_Port	Mode	ship_age	Calendar_Year	Vessel_Type
OGV	1	SF	BA	Oakland	At-Berth	1971	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1971	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1972	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1972	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1973	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1973	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1978	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1978	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1979	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1979	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1980	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1980	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1980	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1980	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1982	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1982	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1983	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1983	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1989	2016	Container		
OGV	1	SF	BA	Oakland	At-Berth	1989	2016	Container		



# 14.B Deselect “Offset” emissions from “Fuel type” field



The image shows a data table with a filter dialog box open over the 'fuel\_type' column. The table has columns: size\_bin, GRowth\_ID, growth\_Fact, tier\_ID, Fuel\_ID, fuel\_type, Control\_Fact, Emfac\_ID, and EIC. The 'fuel\_type' column is currently filtered to show only 'Distillate' entries. The dialog box shows the 'Text Filters' section with the following options:

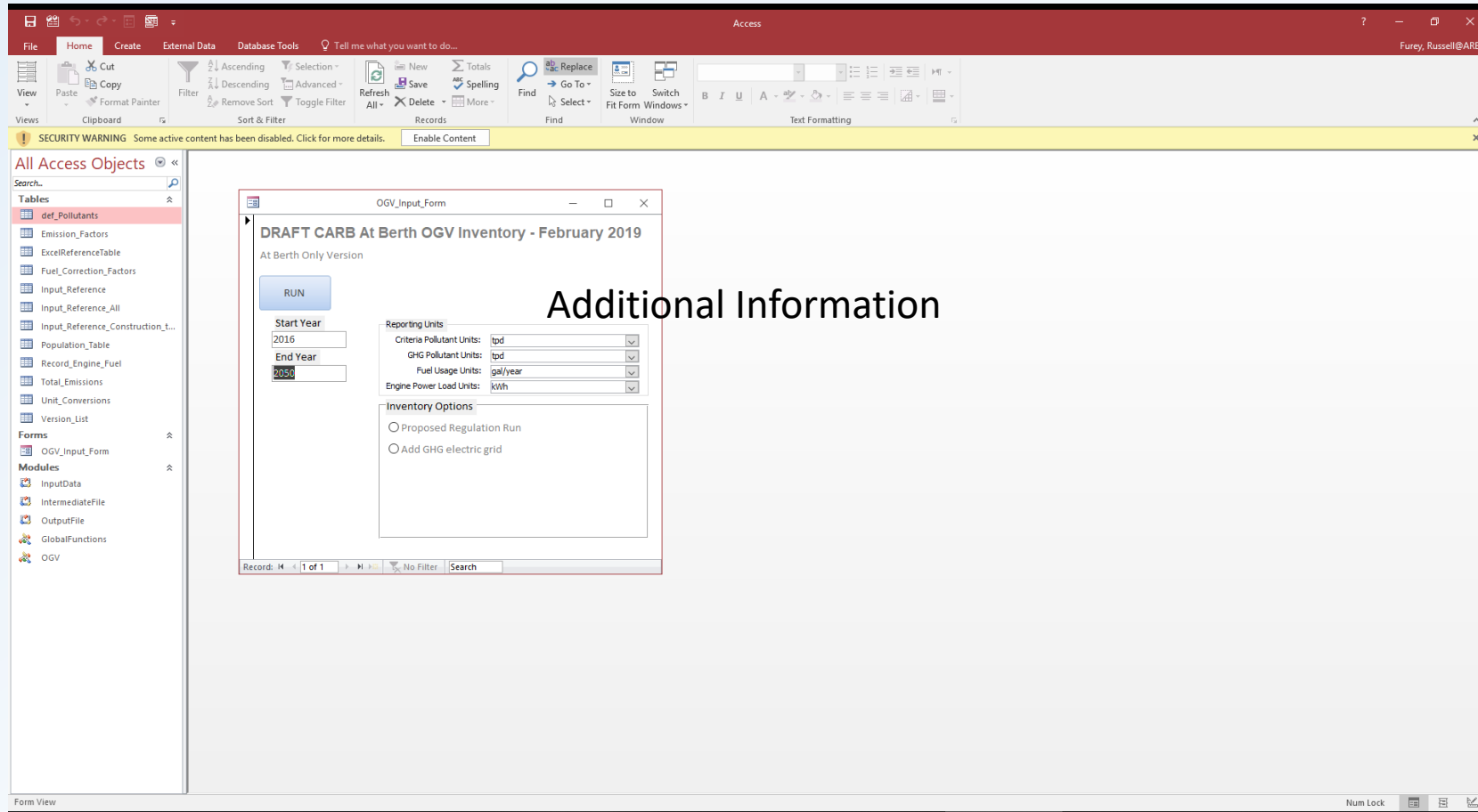
- (Select All)
- (Blanks)
- Distillate
- Offset

The 'OK' button is highlighted in blue.

size_bin	GRowth_ID	growth_Fact	tier_ID	Fuel_ID	fuel_type	Control_Fact	Emfac_ID	EIC
	1399	1	0	4	Distillate			####
	1399	1	0	4	Distillate			####
	1399	1	0	4	Distillate			####
	1399	1	0	4	Distillate			####
	1399	1	0	4	Distillate			####
	1399	1	0	4	Distillate			####
	1399	1	1	4	Distillate			####
	1399	1	1	4	Distillate			####
	1399	1	1	4	Distillate			####
	1399	1	2	4	Distillate			####
	1399	1	2	4	Distillate			####
	20202	1	0	4	Distillate			####
	20202	1	0	4	Distillate			####
	20202	1	0	4	Distillate			####
	20202	1	0	4	Distillate	1	366	#####
	20202	1	0	4	Distillate	1	396	#####
	20202	1	1	4	Distillate	1	364	#####
	20202	1	1	4	Distillate	1	420	#####
	20202	1	1	4	Distillate	1	364	#####
	20202	1	1	4	Distillate	1	420	#####
	20202	1	2	4	Distillate	1	367	#####
	20202	1	2	4	Distillate	1	444	#####

# Additional Information

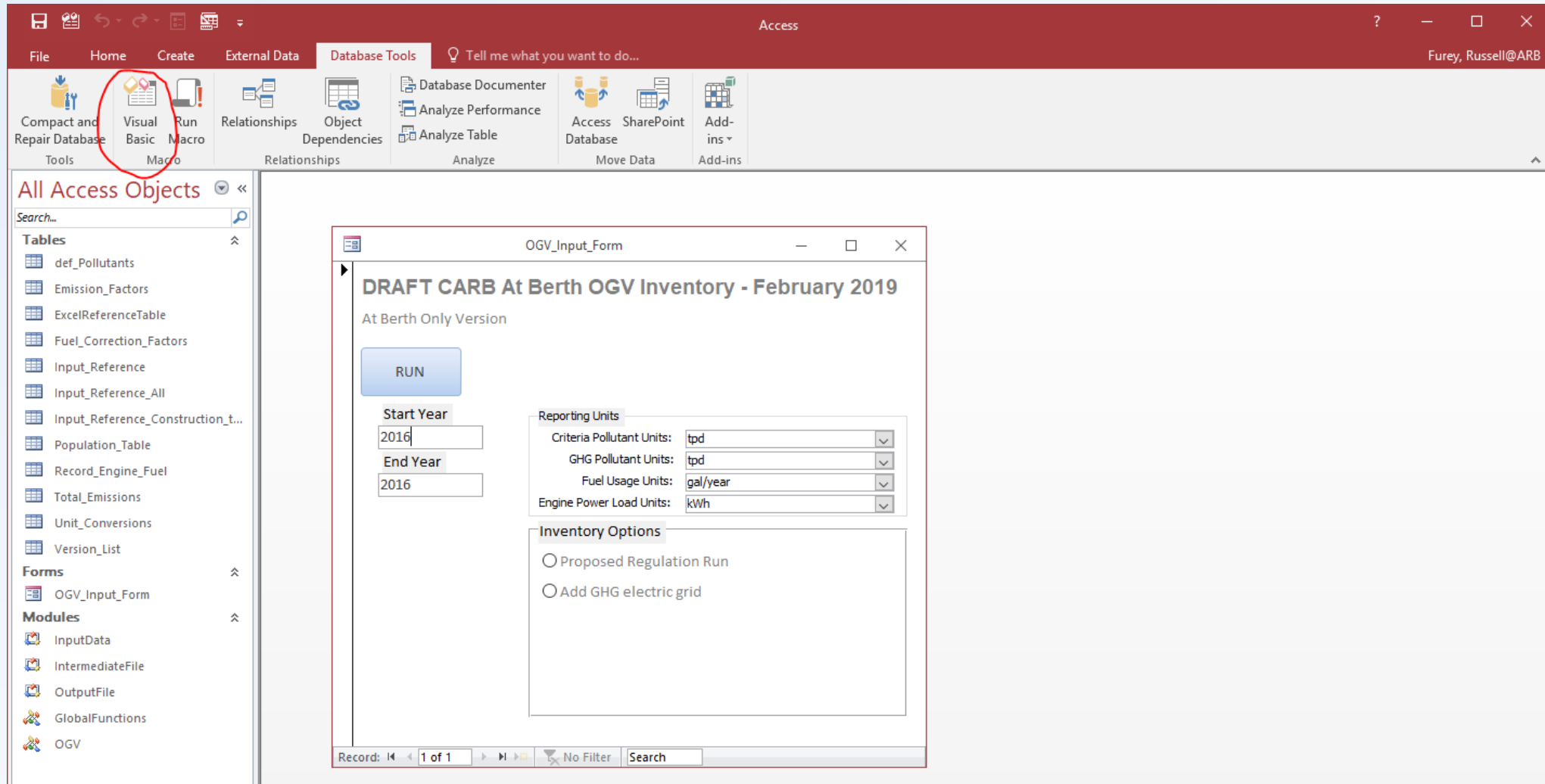
# Model code: VBA in Draft Access Database



# Model Code: Go to database tools

The screenshot shows the Microsoft Access application window. The ribbon is set to 'Database Tools', which is circled in red. The ribbon contains several groups of tools: 'Tools' (Compact and Repair Database), 'Macro' (Visual Basic, Run Macro), 'Relationships' (Relationships, Object Dependencies), 'Analyze' (Database Documenter, Analyze Performance, Analyze Table), 'Move Data' (Access Database, SharePoint), and 'Add-ins' (Add-ins). The 'All Access Objects' pane on the left shows a list of tables, forms, and modules. The 'OGV\_Input\_Form' form is open, displaying a 'DRAFT CARB At Berth OGV Inventory - February 2019' form. The form includes a 'RUN' button, 'Start Year' and 'End Year' text boxes (both containing '2016'), and a 'Reporting Units' section with dropdown menus for 'Criteria Pollutant Units' (tpd), 'GHG Pollutant Units' (tpd), 'Fuel Usage Units' (gal/year), and 'Engine Power Load Units' (kWh). There are also two radio button options under 'Inventory Options': 'Proposed Regulation Run' and 'Add GHG electric grid'. The status bar at the bottom indicates 'Record: 1 of 1' and 'No Filter'.

# Model Code: Select Visual Basic under macro section



# Model Code: Select OGV module

Microsoft Visual Basic for Applications - DRAFT 2019 At Berth OGV Inventory - [Form\_OGV\_Input\_Form (Code)]

Project - Database

(General) (Declarations)

```
Option Compare Database
Option Explicit

Sub apply_Summary_name ()
End Sub

Private Sub Command35_Click ()
    OGV.Main
End Sub

Private Sub frmSummaryOption_Click ()
End Sub

Private Sub Scenario_Selection_Click ()
    If Scenario_Selection = True Then

        If GHG_Grid_option.Value <> True Then
            GHG_Grid_option.Value = True
        End If

        cboUnitsGHG.Value = "tons_CO2eq"
    Else
        If GHG_Grid_option.Value = True Then
            GHG_Grid_option.Value = False
        End If

        cboUnitsGHG.Value = "tpd"
    End If
End Sub

Private Sub txtEndYear_AfterUpdate ()
    If txtEndYear.Value > 2050 Then
        txtEndYear.Value = 2050
    End If
End Sub
```

Immediate

```
strSQL = 0 minutes
Total time = 3 minutes
CREATE TABLE Activity_3 (Record_Engine_fuel_ID autoincrement CONSTRAINT MyFieldConstraint PRIMARY KEY, Record_Engine_ID long, fuel_ID short, Control_Factor double, runtime double);
strSQL = 0 minutes
Total time = 3 minutes
ALTER TABLE Activity_2 add Calendar_Year short, Area_ID short;
strSQL = 0 minutes
Total time = 3 minutes
UPDATE Activity_2 INNER JOIN Activity_1 ON Activity_2.Record_ID = Activity_1.Record_ID SET Activity_2.Calendar_Year = [Activity_1].[Calendar_Year], Activity_2.Area_ID = [Activity_1].[Area_ID];
strSQL = 0 minutes
Total time = 3 minutes
INSERT INTO Activity_3 ( Fuel_ID, Control_Factor, Record_Engine_ID, runtime ) SELECT input_fuel2.Fuel_ID, input_fuel2.Fraction, Activity_2.Record_Engine_ID, Activity_2.runtime FROM Activity_2 INNER JOIN in
```

# Model Code: Select Main function

Microsoft Visual Basic for Applications - DRAFT 2019 At Berth OGV Inventory - [OGV (Code)]

File Edit View Insert Debug Run Tools Add-Ins Window Help

Ln 1, Col 1

Project - Database

Database (DRAFT 2019 At Berth OG)

- Microsoft Access Class Objects
- Form\_OGV\_Input\_Form
- Modules
- GlobalFunctions
- OGV
- Class Modules
- InputData
- IntermediateFile
- OutputFile

```
Option Compare Database
Option Explicit

''''''Module Variables''''''

'Constants
Public Const mintNumberofPollutants As Integer = 13

'Arrays
Public mstrPollutantNames(1 To mintNumberofPollutants) As String

'Database Modules
Dim Inputs As InputData
Dim Turnover As IntermediateFile
Dim Output As OutputFile

'Variables from Form Inputs
'Conversion Variables
Dim strCriteriaUnit As String
Dim strGHGUnit As String
Dim strFuelUnit As String
Dim strSummaryArea As String
Dim strPowerUnit As String
Dim intGeoArea As Integer

Dim intYearsPerFile As Integer

Dim timestart As Date
Dim timefinish As Date
Dim timeStart2 As Date
Dim timeFinish2 As Date

'Scenario Variables
Dim boolScenario As Boolean
Dim ScenType1 As String
Dim ScenType2 As String
Dim alternateCF As Double

Private Sub Check_Inputs()
'This subroutine checks the inputs given in the inventory GUI form, and makes sure they are usable values.
```

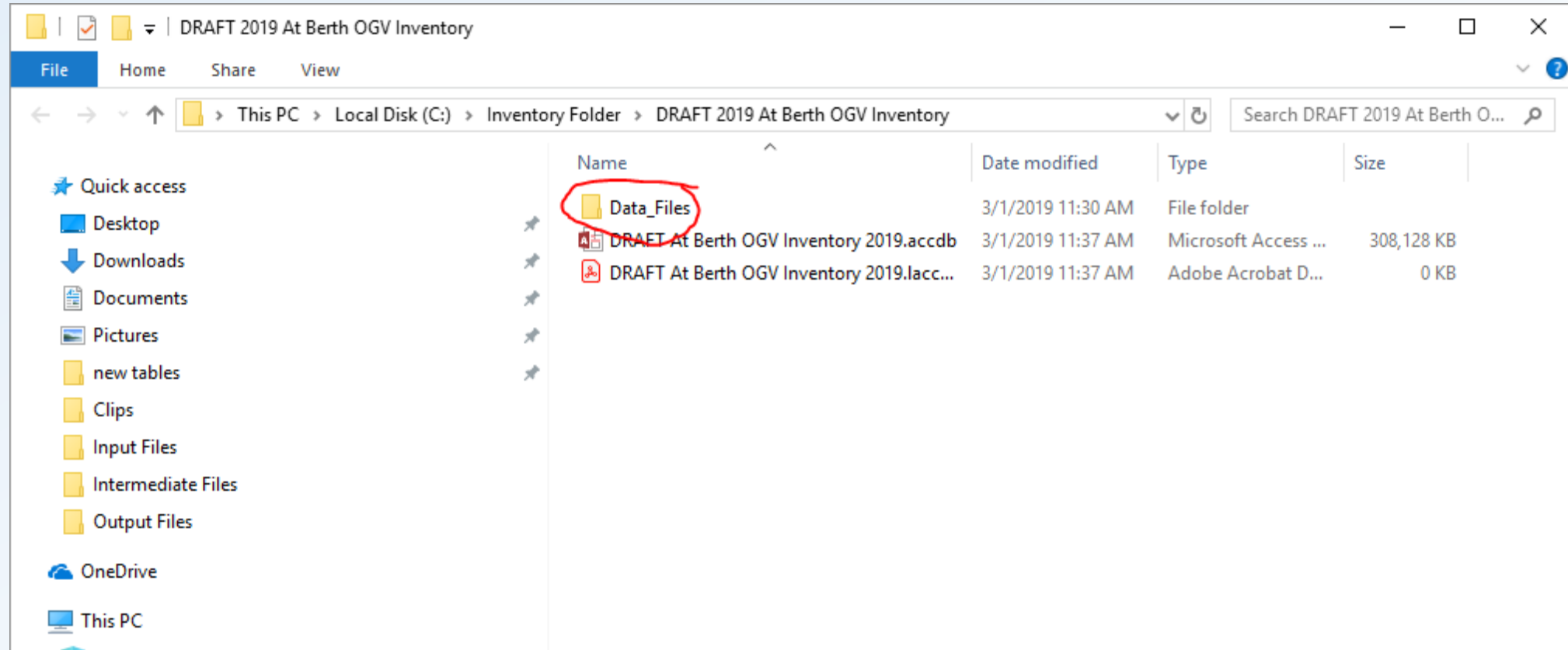
(Declarations)

- (Declarations)
- add\_final\_data\_additions
- add\_pollutants
- apply\_tier
- Check\_Inputs
- convertunits
- create\_expanded\_tier\_table
- export\_Scenario
- ghg\_emissions\_calculation
- initialize\_input
- Main**
- output\_calculation
- populatePollutantArray
- reduce\_long\_visits
- timed\_query

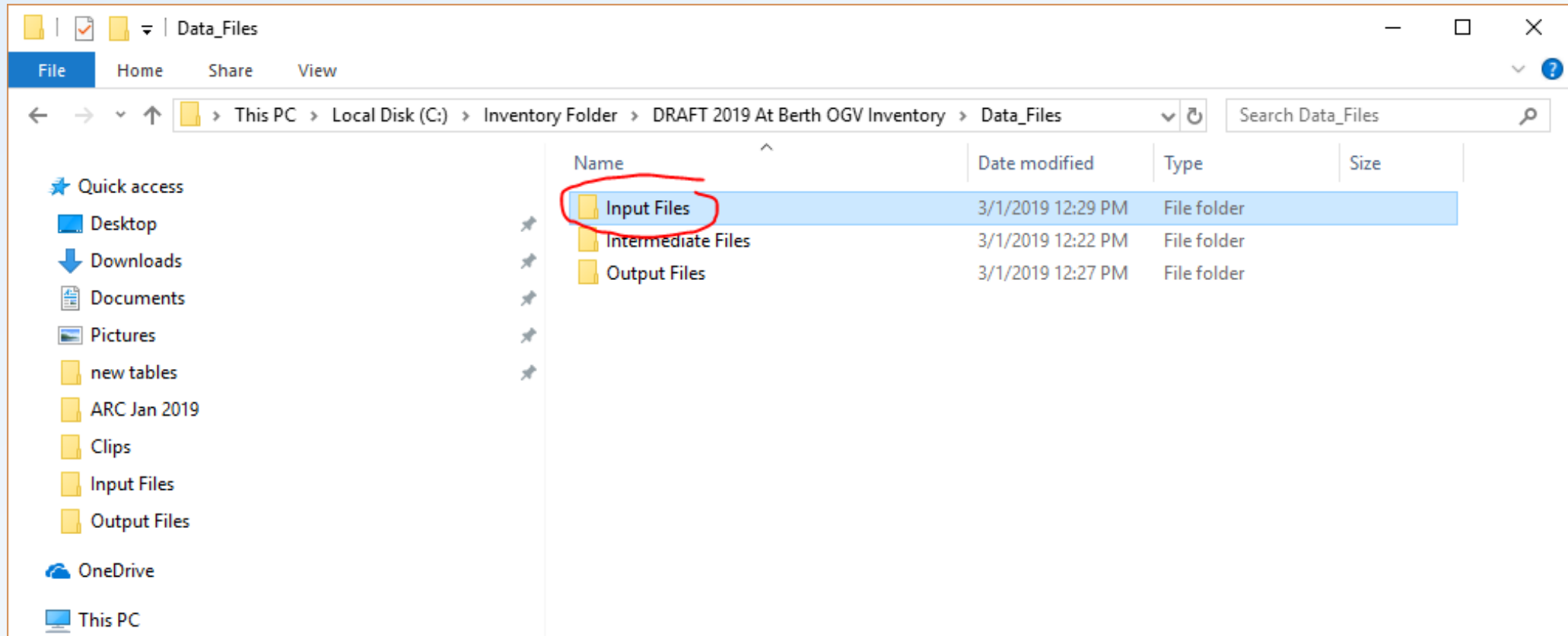
Input Data



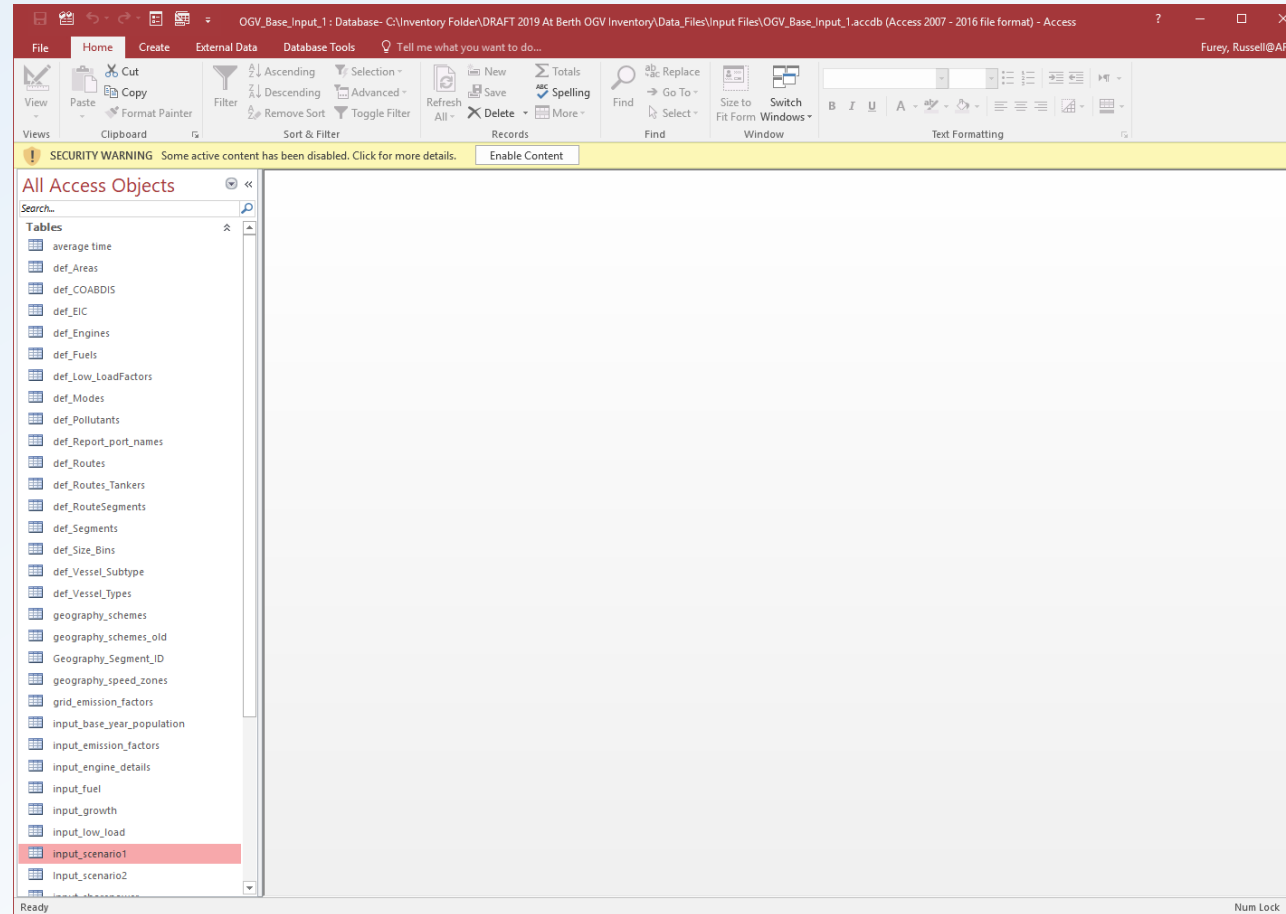
# Input Data: Open data\_files folder



# Input Data: open input files



# Input Data: Database



# Input Data: Notable table – population table

The screenshot displays a database interface with a table viewer. On the left, the 'All Access Objects' pane shows a list of tables, with 'input\_base\_year\_population' circled in red. The main window shows the data for this table, which includes columns for Activity\_ID, Activity\_ID2, ID, Vessel\_ID, Activity\_dat, Calendar\_Ye, Vessel\_type, Vessel\_Subt, Arrival\_Port, Arrival\_Port2, and Arrival\_Port. The data is organized into rows, with the first row highlighted in blue.

Activity_ID	Activity_ID2	ID	Vessel_ID	Activity_dat	Calendar_Ye	Vessel_type	Vessel_Subt	Arrival_Port	Arrival_Port2	Arrival_Port
7	3	1	210	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
19	10	4	1866	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
23	14	6	277	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
44	35	15	2569	2016	2016	5	6	Los Angeles_Berth	Los Angeles	LA-LB
48	39	17	2949	2016	2016	2	2	Los Angeles_Berth	Los Angeles	LA-LB
61	49	21	2437	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
66	54	23	276	2016	2016	4	5	Long Beach_Berth	Long Beach	LA-LB
81	66	28	566	2016	2016	8	15	Los Angeles_Berth	Los Angeles	LA-LB
85	70	30	566	2016	2016	8	15	Long Beach_Berth	Long Beach	LA-LB
89	74	32	566	2016	2016	8	15	Long Beach_Berth	Long Beach	LA-LB
105	90	39	1771	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
110	95	41	1069	2016	2016	3	4	Los Angeles_Berth	Los Angeles	LA-LB
115	100	43	1968	2016	2016	3	4	Los Angeles_Berth	Los Angeles	LA-LB
119	104	45	1587	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
127	108	47	2499	2016	2016	3	4	Long Beach_Berth	Long Beach	LA-LB
131	112	49	895	2016	2016	3	4	Los Angeles_Berth	Los Angeles	LA-LB
135	116	51	1747	2016	2016	3	4	Los Angeles_Berth	Los Angeles	LA-LB

Input\_base\_year\_population table – contains the records of the vessel visits

# Input Data: Notable table – Vessel details

The screenshot displays a data management interface with a table titled 'input\_vessel\_details'. The table contains 20 rows of vessel data. The columns are: Vessel\_ID, Vessel\_type, Vessel\_Type, Vessel\_Subtype, Vessel\_Subt, Propulsion\_System, Size\_bin, Engine\_Pow, Max\_Speed, Year\_of\_bui, and Slide. The 'input\_vessel\_details' table is highlighted in the left sidebar.

Vessel_ID	Vessel_type	Vessel_Type	Vessel_Subtype	Vessel_Subt	Propulsion_System	Size_bin	Engine_Pow	Max_Speed	Year_of_bui	Slide
1	Auto	1	Vehicles Carrier	1	Conventional	99			1988	
2	Auto	1	Vehicles Carrier	2	Conventional	99			1988	
3	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
4	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
5	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
6	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
7	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
8	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
13	Auto	1	Vehicles Carrier	1	Conventional	99			1987	
14	Auto	1	Vehicles Carrier	1	Conventional	99			1988	
24	Auto	1	Vehicles Carrier	1	Conventional	99			1989	
26	Auto	1	Vehicles Carrier	1	Conventional	99			1990	
27	Auto	1	Vehicles Carrier	1	Conventional	99			1990	
87	Auto	1	Vehicles Carrier	1	Conventional	99			2001	
88	Auto	1	Vehicles Carrier	1	Conventional	99			2001	
105	Auto	1	Vehicles Carrier	1	Conventional	99			2001	
106	Auto	1	Vehicles Carrier	1	Conventional	99			2002	
124	Auto	1	Vehicles Carrier	1	Conventional	99			2002	
125	Auto	1	Vehicles Carrier	1	Conventional	99			2002	
134	Auto	1	Vehicles Carrier	1	Conventional	99			2002	
135	Auto	1	Vehicles Carrier	1	Conventional	99			2002	
146	Auto	1	Vehicles Carrier	1	Conventional	99			2003	
147	Auto	1	Vehicles Carrier	1	Conventional	99			2003	
148	Auto	1	Vehicles Carrier	1	Conventional	99			2003	
225	Auto	1	Vehicles Carrier	1	Conventional	99			1985	
229	Auto	1	Vehicles Carrier	1	Conventional	99			1986	
235	Auto	1	Vehicles Carrier	1	Conventional	99			1986	

Input\_vessel\_details – contains the individual vessel characteristics that are used in the inventory

Input Data