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**Technical Design Document**

**EDW: Import Petra Data**

|  |  |
| --- | --- |
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# 

# **Executive Summary**

Antero utilizes Petra for managing and visualizing geological, geophysical and engineering data related to not only Antero Wells but also for wells operated by third parties in areas of interest to Antero. The primary users of Petra and its data is the Geology and Land (GIS) teams. Petra data is divided by “projects”, which are individual databases that Antero has logically divided by region, such as “WEST VIRGINIA”. Historically only data for the WEST VIRGINA and OHIO projects were transferred from Petra into the EDW for analytics and integration. The process that managed this transfer of data had a limited capacity and long run times that were prohibitive to adding additional “projects”. The “EDW: Import Petra Data” Solution enables multiple projects defined with consistent structures in Petra to be imported to the EDW. Thus, expanding the data available for further analytics and integrations.

# **Detailed Design**

The “EDW: Import Petra Data” Solution is comprised of x Components

* Orchestration Mechanism
* SSIS Package
* Config Table (add table name)
* Data Tables (add tables names)
* Views (Add views, include two sections; views part of solution, views modified as part of initial implementation that aren’t typically deployed with solution)
* On-Demand UI

**Future State Details**

Future State Server Details:

Database Server Name: TESTdw01

Database: EDW

SSIS Script Name: Load\_EDW\_Stage\_Petra.dtsx

Petra Server: dbPetra = Driver={DBISAM 4 ODBC Driver};uid=antero\sqlservices;privatedirectory=K:\WEST VIRGINIA;StrictChangeDetection=False;ForceBufferFlush=False;LockProtocol=lpOptimistic;LockWaitTime=1;lockretrycount=1;ReadOnly=False;catalogname=K:\WEST VIRGINIA\DB;remoteport=12005;remoteipaddress=127.0.0.1;remotetype=LAN;connectiontype=Local



Data Flow for future state SSIS script:

1. Data load must be loaded daily
2. Compares the PK and Rowhash values in Petra tables ZDATA, UWI, and ZONEDEF, against PK and rowhash values in EDW respective tables of:
   1. EDW\_Stage.Stage.PETA\_ZDATA
   2. EDW\_Stage.Stage.Petra\_UWI
   3. EDW\_Stage.Stage.Petra\_ZONEDEF
   4. EDW\_Stage.Stage.Petra\_INTDATA
   5. EDW\_Stage.Stage.Petra\_LOCATION
   6. EDW\_Stage.Stage.WellHeaderPetra
   7. EDW\_Stage.Stage.Petra\_ZFLDDEF
3. Loads the changes into a temporary table in memory
4. Performs changes of the inserts updates and deletes to tables:
   1. EDW\_Stage.Stage.PETA\_ZDATA
   2. EDW\_Stage.Stage.Petra\_UWI
   3. EDW\_Stage.Stage.Petra\_ZONEDEF
   4. EDW\_Stage.Stage.Petra\_INTDATA
   5. EDW\_Stage.Stage.Petra\_LOCATION
   6. EDW\_Stage.Stage.WellHeaderPetra
   7. EDW\_Stage.Stage.Petra\_ZFLDDEF
5. Write status to log table

A screenshot of a computer

AI-generated content may be incorrect.

**On Demand Process**

The SSIS script will be set up to accept parameters from a developed UI.

(Directions on where to access)

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

Upon submitting (“Click Me” button) the UI will:

1. Perform a check if the SSIS is already running
   1. If already running, will return an error that package is already running

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AI-generated content may be incorrect.

* 1. If not running, pass the project parameter to the SSIS package and update the log table

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AI-generated content may be incorrect.

1. initiate the SSIS package
2. Log table will update with completion stats when complete
3. The user can check the status of update process through the Refresh button

In case of failure the notifications will be sent to the EDWAlertsPROD and SQLAlerts user groups.

**Source to target Mapping**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Source | | | Transformation | Target | | | | |
| Data Source | Table | Column | Data Source | Schema | Database Name | Table | Column |
| Petra | ZDATA | FID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | FID |
| Petra | ZDATA | WSN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | WSN |
| Petra | ZDATA | ZID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | ZID |
| Petra | ZDATA | Z | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | Z |
| Petra | ZDATA | POSTDEPTH | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | POSTDEPTH |
| Petra | ZDATA | QUALITY | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | QUALITY |
| Petra | ZDATA | SYMBOL | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | SYMBOL |
| Petra | ZDATA | CHGDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | CHGDATE |
| Petra | ZDATA | TEXTLEN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | TEXTLEN |
| Petra | ZDATA | TEXT | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | TEXT |
| Petra | ZDATA | DATALEN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | DATALEN |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZDATA | ROWHASH |
| Petra | UWI | WSN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | WSN |
| Petra | UWI | UWI | None | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | UWI |
| Petra | UWI | LABEL | None | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | LABEL |
| Petra | UWI | SORTNAME | None | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | SORTNAME |
| Petra | UWI | FLAGS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | FLAGS |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_UWI | ROWHASH |
| Petra | ZONEDEF | ZID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | ZID |
| Petra | ZONEDEF | NAME | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | NAME |
| Petra | ZONEDEF | DESC | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | DESC |
| Petra | ZONEDEF | KIND | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | KIND |
| Petra | ZONEDEF | UMODE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | UMODE |
| Petra | ZONEDEF | LMODE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | LMODE |
| Petra | ZONEDEF | UTOPID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | UTOPID |
| Petra | ZONEDEF | LTOPID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | LTOPID |
| Petra | ZONEDEF | UDEPTH | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | UDEPTH |
| Petra | ZONEDEF | LDEPTH | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | LDEPTH |
| Petra | ZONEDEF | UOFFSET | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | UOFFSET |
| Petra | ZONEDEF | LOFFSET | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | LOFFSET |
| Petra | ZONEDEF | ADDDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | ADDDATE |
| Petra | ZONEDEF | CHGDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | CHGDATE |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZONEDEF | ROWHASH |
| Petra | INTDATA | WellSourceKey | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | WellSourceKey |
| Petra | INTDATA | DATAID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | DATAID |
| Petra | INTDATA | WSN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | WSN |
| Petra | INTDATA | IID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | IID |
| Petra | INTDATA | FMNAME | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | FMNAME |
| Petra | INTDATA | TOP | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | TOP |
| Petra | INTDATA | BASE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | BASE |
| Petra | INTDATA | DATE1 | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | DATE1 |
| Petra | INTDATA | DATE2 | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | DATE2 |
| Petra | INTDATA | FLAGSIUNITS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | FLAGSIUNITS |
| Petra | INTDATA | ADDDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | ADDDATE |
| Petra | INTDATA | CHGDATEQUALITY | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | CHGDATEQUALITY |
| Petra | INTDATA | ETL\_Load\_Date | None | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | ETL\_Load\_Date |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_INTDATA | ROWHASH |
| Petra | LOCATION | WellSourceKey | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | WellSourceKey |
| Petra | LOCATION | WSN | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | WSN |
| Petra | LOCATION | FLAGS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | FLAGS |
| Petra | LOCATION | X | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | X |
| Petra | LOCATION | Y | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | Y |
| Petra | LOCATION | Z | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | Z |
| Petra | LOCATION | LAT | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | LAT |
| Petra | LOCATION | LON | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | LON |
| Petra | LOCATION | BOTLAT | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | BOTLAT |
| Petra | LOCATION | BOTLON | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | BOTLON |
| Petra | LOCATION | BOTX | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | BOTX |
| Petra | LOCATION | BOTY | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | BOTY |
| Petra | LOCATION | CONGRESS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | CONGRESS |
| Petra | LOCATION | TEXASLOC | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | TEXASLOC |
| Petra | LOCATION | OFFSHORE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | OFFSHORE |
| Petra | LOCATION | CHGDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | CHGDATE |
| Petra | LOCATION | ETL\_Load\_Date | None | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | ETL\_Load\_Date |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_LOCATION | ROWHASH |
| Petra | ZFLDDEF | ZONE\_NAME | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ZONE\_NAME |
| Petra | ZFLDDEF | ZONE\_DESCFID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ZONE\_DESCFID |
| Petra | ZFLDDEF | ZID | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ZID |
| Petra | ZFLDDEF | NAME | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | NAME |
| Petra | ZFLDDEF | SOURCE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | SOURCE |
| Petra | ZFLDDEF | DESC | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | DESC |
| Petra | ZFLDDEF | UNITS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | UNITS |
| Petra | ZFLDDEF | KIND | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | KIND |
| Petra | ZFLDDEF | NDEC | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | NDEC |
| Petra | ZFLDDEF | ADDDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ADDDATE |
| Petra | ZFLDDEF | CHGDATE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | CHGDATE |
| Petra | ZFLDDEF | FLAGS | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | FLAGS |
| Petra | ZFLDDEF | UNITSTYPE | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | UNITSTYPE |
| Petra | ZFLDDEF | ETL\_Load\_Date | None | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ETL\_Load\_Date |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | Petra\_ZFLDDEF | ROWHASH |
| Petra | WellHeaderPetra | WSN | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | WSN |
| Petra | WellHeaderPetra | FLAGS | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | FLAGS |
| Petra | WellHeaderPetra | ADDDATE | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | ADDDATE |
| Petra | WellHeaderPetra | CHGDATE | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | CHGDATE |
| Petra | WellHeaderPetra | ELEV\_ZID | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | ELEV\_ZID |
| Petra | WellHeaderPetra | ELEV\_FID | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | ELEV\_FID |
| Petra | WellHeaderPetra | SYMBOL | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | SYMBOL |
| Petra | WellHeaderPetra | UWI | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | UWI |
| Petra | WellHeaderPetra | LABEL | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | LABEL |
| Petra | WellHeaderPetra | SHORTNAME | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | SHORTNAME |
| Petra | WellHeaderPetra | WELLNAME | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | WELLNAME |
| Petra | WellHeaderPetra | SYMCODE | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | SYMCODE |
| Petra | WellHeaderPetra | OPERATOR | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | OPERATOR |
| Petra | WellHeaderPetra | HISTOPER | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | HISTOPER |
| Petra | WellHeaderPetra | LEASENAME | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | LEASENAME |
| Petra | WellHeaderPetra | LEASENUMBER | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | LEASENUMBER |
| Petra | WellHeaderPetra | FIELDNAME | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | FIELDNAME |
| Petra | WellHeaderPetra | FMATTD | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | FMATTD |
| Petra | WellHeaderPetra | PRODFM | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | PRODFM |
| Petra | WellHeaderPetra | COUNTY | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | COUNTY |
| Petra | WellHeaderPetra | STATE | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | STATE |
| Petra | WellHeaderPetra | REMARKS | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | REMARKS |
| Petra | WellHeaderPetra | DATETABLE | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | DATETABLE |
| Petra | WellHeaderPetra | ETL\_Load\_Date | None | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | ETL\_Load\_Date |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | Project |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | Source |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | Tablename |
|  |  |  |  | EDW Stage | Stage | EDW\_STAGE | WellHeaderPetra | ROWHASH |

# Implementation

**SSIS Package Information**

Servername:DEVSSIS01

Project name: Load\_EDW\_Petra

Package Name: Load\_EDW\_Stage\_Petra.dtsx

**Petra project information**

Servername:

Project File Path:

# Maintenance

Job name 1: ETL - EDW - Queue for Execution - Petra Stage Source Data – Job is running at 6:00 PM MST daily

Job name 2: - ETL - EDW - Run ETL Process - Petra Stage Source Data

– checking queue every 2 minutes. IF job found queue, it will start the Load\_EDW\_Stage\_Petra.dtsx

**Development – if business wants to add or remove a specific table to Petra load SSIS ETL:**

1. Load the package from the source control, create a feature branch(<https://devops.anteroresources.com/DefaultCollection/Enterprise%20Data/_git/legacy-edw>)
2. Edit package from package Petra load solution
3. Perform the add/remove of the Petra tables
4. Update the environment variable accordingly
5. Commit changes to the source control
6. Deploy changes to DEVSSIS01 to Peta project
7. Test the changes, with the help of Antero team, deploy the changes to the Test Server
8. After tests are complete on test server, package will be ready for production deployment

**Development – if business wants to add or remove project to SSIS package:**

1. Load the package from the source control, create a feature branch(<https://devops.anteroresources.com/DefaultCollection/Enterprise%20Data/_git/legacy-edw>)
2. Edit package from package Petra load solution

# Test Procedure

Test Results from field level comparisons:

Target and Source table/row count as per Project

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Project | TargetDbcount | tblName | SourceCount | Date |
| EAGLE FORD | 235623 | Petra\_Location | 235623 | 2/19/2025 |
| EAGLE FORD | 235623 | Petra\_UWI | 235623 | 2/19/2025 |
| EAGLE FORD | 4557984 | Petra\_Zdata | 4557984 | 2/19/2025 |
| EAGLE FORD | 152 | Petra\_Zflddef | 152 | 2/19/2025 |
| EAGLE FORD | 13 | Petra\_Zonedef | 13 | 2/19/2025 |
| EAGLE FORD | 235623 | WellHeaderPetra | 235623 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 245123 | Petra\_Location | 245123 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 245124 | Petra\_UWI | 245124 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 11179784 | Petra\_Zdata | 11179784 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 197 | Petra\_Zflddef | 197 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 8 | Petra\_Zonedef | 8 | 2/19/2025 |
| HAYNESVILLE-AR-LA-TX | 245124 | WellHeaderPetra | 245124 | 2/19/2025 |
| PERMIAN BASIN | 12739 | Petra\_Intdata | 12739 | 2/19/2025 |
| PERMIAN BASIN | 637307 | Petra\_Location | 637307 | 2/19/2025 |
| PERMIAN BASIN | 637310 | Petra\_UWI | 637310 | 2/19/2025 |
| PERMIAN BASIN | 17887412 | Petra\_Zdata | 17887412 | 2/19/2025 |
| PERMIAN BASIN | 1355 | Petra\_Zflddef | 1255 | 2/19/2025 |
| PERMIAN BASIN | 45 | Petra\_Zonedef | 45 | 2/19/2025 |
| PERMIAN BASIN | 637310 | WellHeaderPetra | 637310 | 2/19/2025 |
| WEST VIRGINIA | 279772 | Petra\_Intdata | 279772 | 2/19/2025 |
| WEST VIRGINIA | 444542 | Petra\_Location | 444542 | 2/19/2025 |
| WEST VIRGINIA | 449058 | Petra\_UWI | 449058 | 2/19/2025 |
| WEST VIRGINIA | 19786036 | Petra\_Zdata | 19786036 | 2/19/2025 |
| WEST VIRGINIA | 64067 | Petra\_Zflddef | 64067 | 2/19/2025 |
| WEST VIRGINIA | 66 | Petra\_Zonedef | 66 | 2/19/2025 |
| WEST VIRGINIA | 449058 | WellHeaderPetra | 449058 | 2/19/2025 |
| WILLISTON BASIN | 59375 | Petra\_Location | 59375 | 2/19/2025 |
| WILLISTON BASIN | 59375 | Petra\_UWI | 59375 | 2/19/2025 |
| WILLISTON BASIN | 2447566 | Petra\_Zdata | 2447566 | 2/19/2025 |
| WILLISTON BASIN | 277 | Petra\_Zflddef | 277 | 2/19/2025 |
| WILLISTON BASIN | 13 | Petra\_Zonedef | 13 | 2/19/2025 |
| WILLISTON BASIN | 59375 | WellHeaderPetra | 59375 | 2/19/2025 |

# Appendix

# **Background**

Current Petra to EDW Process Flow:



**Current State Server Details:**

Database Server Name: TESTdw01

Database: EDW

SSIS Script Name: Load\_EDW\_Petra

Petra Server: dbPetra = Driver={DBISAM 4 ODBC Driver};uid=antero\sqlservices;privatedirectory=K:\WEST VIRGINIA;StrictChangeDetection=False;ForceBufferFlush=False;LockProtocol=lpOptimistic;LockWaitTime=1;lockretrycount=1;ReadOnly=False;catalogname=K:\WEST VIRGINIA\DB;remoteport=12005;remoteipaddress=127.0.0.1;remotetype=LAN;connectiontype=Local

Data Flow Steps (Job only represents the work completed for the WEST VIRGINIA project):

1. SSIS script runs daily
2. Script truncates the following tables:
   1. EDW\_Stage.Stage.PETA\_ZDATA
   2. EDW\_Stage.Stage.Petra\_UWI
   3. EDW\_Stage.Stage.Petra\_ZONEDEF
   4. EDW\_Stage.Stage.Petra\_INTDATA
   5. EDW\_Stage.Stage.Petra\_LOCATION
   6. EDW\_Stage.Stage.WellHeaderPetra
   7. EDW\_Stage.Stage.Petra\_ZFLDDEF
3. Full load is performed for:
   1. Petra: ZDATA to EDW: EDW\_Stage.Stage.PETA\_ZDATA
   2. Petra: UWI to EDW: EDW\_Stage.Stage.Petra\_UWI
   3. Petra: ZONEDEF to EDW: EDW\_Stage.Stage.Petra\_ZONEDEF
   4. Petra: INTDATA to EDW\_Stage.Stage.Petra\_INTDATA
   5. Petra: LOCATION to EDW\_Stage.Stage.Petra\_LOCATION
   6. Petra: WellHeaderPetra to EDW\_Stage.Stage.WellHeaderPetra
   7. Petra: ZFLDDEF to EDW\_Stage.Stage.Petra\_ZFLDDEF
4. Write status to log table
5. Send email of load results

# Requirements

The Petra ERP is the system that stores the productions values for the Antero’s existing projects. It utilizes a file-based file storage for each of the projects’ data. In Antero’s case there is a file directory for each of the projects with table files stored in each repository. To access the data, a third party, DBISAM driver is needed for data to be read from the SSIS package. The following projects are in scope for the migration, and all additional projects can be considered at a future date:

* WEST VIRGINIA
* PERMIAN BASIN
* EAGLE FORD
* HAYNESVILLE-AR-LA-TX
* WILLISTON BASIN

1. Data load must be loaded daily
2. Data load must be performed at a time to not affect the typical MST working hours
3. There must be an additional process to load the projects through a self-serving on demand process to be ran at any time by the business
4. Data from Petra must include the following projects
   1. WEST VIRGINIA
   2. PERMIAN BASIN
   3. EAGLE FORD
   4. HAYNESVILLE-AR-LA-TX
   5. WILLISTON BASIN
5. Data from Petra must include the following tables for each project:
   1. ZDATA
   2. UWI
   3. ZONEDEF
   4. INTDATA
   5. LOCATION
   6. ZFLDDEF
   7. WellHeaderPetra
6. Table will include these additional columns for mapping and incremental load functionality:
   1. Project
   2. Source
   3. WellSourceKey
   4. Tablename
   5. ROWASH
7. Data from the ZDATA table must include the following columns for each project:
   1. FID
   2. WSN
   3. ZID
   4. Z
   5. POSTDEPTH
   6. QUALITY
   7. SYMBOL
   8. CHGDATE
   9. TEXTLEN
   10. TEXT
   11. DATALEN
8. Data from the UWI table must include the following columns for each project:
   1. WSN
   2. UWI
   3. LABEL
   4. SORTNAME
   5. FLAGS
9. Data from the ZONEDEF table must include the following columns for each project:
   1. ZID
   2. NAME
   3. DESC
   4. KIND
   5. UMODE
   6. LMODE
   7. UTOPID
   8. LTOPID
   9. UDEPTH
   10. LDEPTH
   11. UOFFSET
   12. LOFFSET
   13. ADDDATE
   14. CHGDATE
10. Data from the INTDATA table must include the following columns for each project:
    1. WellSourceKey
    2. DATAID
    3. WSN
    4. IID
    5. FMNAME
    6. TOP
    7. BASE
    8. DATE1
    9. DATE2
    10. FLAGSIUNITS
    11. ADDDATE
    12. CHGDATEQUALITY
    13. ETL\_Load\_Date
11. Data from the LOCATION table must include the following columns for each project:
    1. WellSourceKey
    2. WSN
    3. FLAGS
    4. X
    5. Y
    6. Z
    7. LAT
    8. LON
    9. BOTLAT
    10. BOTLON
    11. BOTX
    12. BOTY
    13. CONGRESS
    14. TEXASLOC
    15. OFFSHORE
    16. CHGDATE
    17. ETL\_Load\_Date
12. Data from the ZFLDDEF table must include the following columns for each project:
    1. ZONE\_NAME
    2. ZONE\_DESCFID
    3. ZID
    4. NAME
    5. SOURCE
    6. DESC
    7. UNITS
    8. KIND
    9. NDEC
    10. ADDDATE
    11. CHGDATE
    12. FLAGS
    13. UNITSTYPE
    14. ETL\_Load\_Date
13. Data from the WellHeaderPetra table must include the following columns for each project:
    1. WellSourceKey
    2. WSN
    3. FLAGS
    4. ADDDATE
    5. CHGDATE
    6. ELEV\_ZID
    7. ELEV\_FID
    8. SYMBOL
    9. UWI
    10. LABEL
    11. SHORTNAME
    12. WELLNAME
    13. SYMCODE
    14. OPERATOR
    15. HISTOPER
    16. LEASENAME
    17. LEASENUMBER
    18. FIELDNAME
    19. FMATTD
    20. PRODFM
    21. COUNTY
    22. STATE
    23. REMARKS
    24. DATETABLE
    25. ETL\_Load\_Date
14. Data from the ZDATA table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_ZDATA table in the EDW
15. Data from the UWI table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_UWI table in the EDW
16. Data from the ZONEDEF table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_ZONEDEF table in the EDW
17. Data from the INTDATA table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_INTDATA table in the EDW
18. Data from the LOCATION table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_LOCATION table in the EDW
19. Data from the ZFLDDEF table in Petra must be loaded to the EDW\_Stage.Stage.Petra\_ ZFLDDEF table in the EDW
20. Data from the WellHeaderPetra table in Petra must be loaded to the EDW\_Stage.WellHeaderPetra table in the EDW
21. The data load process must include procedures to perform a delta incremental and full load whereas it will check the PK and rowhash values for UID.
22. The data load process must produce a log file/table to track the success of the data load