COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

INVESTIGATION OF KENTUCKY)	
UTILITIES COMPANY'S AND LOUISVILLE)	
GAS AND ELECTRIC COMPANY'S)	
RESPECTIVE NEED FOR AND COST OF)	CASE NO. 2015-00194
MULTIPHASE LANDFILLS AT THE)	
TRIMBLE COUNTY AND GHENT)	
GENERATING STATIONS		

STERLING VENTURES RESPONSES TO SUPPLEMENTAL DATA REQUESTS OF KENTUCKY UTILITIES COMPANY AND LOUISVILLE GAS AND ELECTRIC COMPANY

Sterling Ventures, LLC ("Sterling") hereby submits the following in response to Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E") (collectively, the "Companies") supplemental data requests dated August 20, 2015.

Respectfully submitted,

Sterlin Ventures, LLC

W Walter yr.

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September 3, 2015

VERIFICATION

COMMONWEALTH OF KENTUCKY)	
)	SS:
COUNTY OF FAYETTE)	

The undersigned, John W. Walters, Jr., being duly sworn, deposes and states that he is the General Counsel and CFO of Sterling Ventures, LLC, that he has personal knowledge of the matters set forth in the responses for which he has identified as the witness, and the answers contained therein are true and accurate to the best of his knowledge, information and belief formed after a reasonable inquiry.

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 3rd day of September, 2015.

Notary Public # 524812

My Commission Expires: | | 31 | 19

VERIFICATION

COMMONWEALTH OF KENTUCKY) ,	
)	SS:
COUNTY OF FAYETTE)	

The undersigned, J. Steven Gardner, PE, being duly sworn, deposes and states that he is the President and CEO of ECSI, LLC, that he has personal knowledge of the matters set forth in the responses for which he has identified as the witness, and the answers contained therein are true and accurate to the best of his knowledge, information and belief formed after a reasonable inquiry.

Subscribed and sworn to before me, a Notary Public in and before said County and State, this ay of September, 2015.

My Commission Expires: | | 31 | 9

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 1

Responding Witness: Steve Gardner

Supplemental Data Requests

1. Sterling has stated there are three potential methods for moving coal combustion residuals ("CCR") into its mine. For each method, please list (in a form substantively identical to the blank table below) all of the environmental permits required for each method, beginning with Sterling's preferred means of moving CCR from the Trimble County Generating Station through the CCR's placement in Sterling's mine. Please include in the list all such permits already required and those that may be required in the future.

STERLING VENTURES, LLC

Permitting	Name of Permit	Proposed	Proposed Permit	Projected Date of
Authority	Required	Party to	Application	Receiving Permit
	(including	Apply for	Submission Date	
	relevant statutory	Permit		
	or regulatory	(Companies		
	citation)	or Sterling)		

.

¹ Gardner Testimony at 15 lines 5-11.

<u>RESPONSE:</u> See information in requested table format below:

Permitting Authority	Name of Permit Required (including relevant statutory or regulatory citation)	Proposed Party to Apply for Permit (Companies or Sterling)	Proposed Permit Application Submission Date	Projected Date of Receiving Permit
Army Corps of Engineers	CWA 404 modification to barge	Sterling		
Div of Mine Reclamation and Enforcement	Surface permit revision	Sterling		
Division of Air Quality	Revision to add point source (Title V CAA)	Sterling		
Division of Waste Management	Special Waste permit (CCR final rule)	Sterling		
Division of Water	CWA 402 (modification may not be needed)	Sterling		

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 2

Responding Witness: Steve Gardner

2. Provide copies of all analyses, studies, data, reports and evaluations related to the Sterling mine that were reviewed or prepared by J. Steven Gardner that support his opinions in Section III "Environmental Impacts of the Sterling Plan" of his August 6, 2015 pre-filed direct testimony.

RESPONSE: Sterling Materials supplied mine maps, production data and discussed logistical options for placing the CCR in the mine. Mr. Gardner also personally toured the mine. His responses were based upon the above, plus knowledge and experience of mining, permits and expected environmental impacts.

Other documents that were reviewed and are attached for reference include:

- "Systematic Selection and Application of Backfill in Underground Mines", Doctoral
 Dissertation by zur Erlangung des akademischen Grades.
- "Practical Techniques to Improve the Air Quality in Underground Stone Mines",
 National Institute for Occupational Safety and Health (NIOSH).
- "Use of Coal Combustion Products in Mine-Filling Applications: A Review of Available Literature and Case Studies", Department of Energy Award No: 99-CBRC.

(See Attachment A)

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 3

Responding Witness: Steve Gardner

- 3. Mr. Gardner states that his calculations "assume[] that 90% of the available mine space will be used for CCR storage."²
 - a. Describe how the 90% figure was determined.

RESPONSE: A production table, indicating actual historical production since the commencement of mining activities and reflecting Sterling's future production was prepared. Considering the average density of the limestone being extracted, the current and future void space was calculated. The 90% figure was based on the existing and future volume that will be generated from the limestone mining activities, minus 10% of that volume which will be devoted to work areas, ventilation and haul ways.

b. If this figure is reflective of not being able to place CCR to the mine roof, what did Sterling determine would be the distance from the top of the CCR to the mine roof?

RESPONSE: Handling of the material would involve pushing with dozer, loader or similar equipment to the back wall to the maximum extent possible. It is fully anticipated that the material cannot be filled to the full height of the void. There could be a gap of several feet depending on the mining height at a particular location in the mine.

c. What procedures will Sterling Ventures follow to fill the entire void space given the low angle of repose and loose density of CCR materials?

RESPONSE: A detailed procedure is being developed; however, based on the physical properties of the CCR obtained from technical documents produced by KU/LGE, it is Mr. Gardner's opinion that Sterling will be able to effectively handle and store the material, substantially filling the available void space.

² Gardner Testimony at 11 line 7.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 4

Responding Witness: Steve Gardner

- 4. Mr. Gardner states, "Sterling currently uses material extracted within the mine to fill mine voids, and places curtains between the top of the extracted material and the roof of the mine to seal the area for mine ventilation purposes."³
 - a. Please describe this material.

RESPONSE: The material would be rock from the mine itself that is pushed up to the maximum height practical along with ventilation curtain (heavy plastic or tarp type) material which is hung from frames to seal, block or direct airflow in the mine.

b. If Sterling disposed of CCR in its mine, would it be able to avoid creating and needing to dispose of "the extracted material" Mr. Gardner addresses in his statement quoted above? If so, to what extent and how?

RESPONSE: This material is derived from rock diverted from sales inventory.

c. What is the estimated volume of this material in relation to the mining rates Sterling has provided?

<u>RESPONSE:</u> There is no quantitative estimate at the time, but it would be on the order of magnitude of thousands of tons.

d. Does Mr. Gardner's 90% available mine space assumption account for storing this extracted material? If not, please provide adjusted mine space availability calculations that account for the need to store this material.

RESPONSE: Yes.

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³ Gardner Testimony at 4 lines 12-14.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 5

Responding Witness: Steve Gardner

5. Provide mine maps showing the current areas from which limestone has been extracted from all three levels. For each such level, depict and illustrate on such maps where CCR would be placed to aid in mine ventilation.

RESPONSE: Mine maps have been provided previously that depict the mined areas within each of the three (3) levels. Detailed drawings showing placement of CCR materials cannot be finalized until further conversations are held with LGE/KU to define the timing of and exact volumes of CCR to be placed in the mine.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 6

Responding Witness: Steve Gardner

- 6. Mr. Gardner states that Sterling uses extracted material coupled with curtains to fill mine voids and "seal the area for mine ventilation purposes," yet Sterling's "Mine Emergency Plan" states, "The mine does not … have ventilation doors, air regulators, or stoppings." 5
 - a. Please explain the apparent inconsistency between the two statements above.

RESPONSE: There is no inconsistency in the statements. The statement "seal the area for mine ventilation purposes," is a description of art more than technically accurate. Seal in mining terms generally means prevent air flow. In the Sterling's case it is directing air flow to working places in the mine to provide adequate air flow for mine working areas. Ventilation doors, air regulators, or stoppings refer to other constructed types of ventilation controls that can be used in mines. Reference is made to an attached technical paper published by the National Institute for Occupational Safety and Health (NIOSH), entitled "*Practical Techniques to Improve the Air Quality in Underground Stone Mines*", Section 3: Designing Efficient Ventilation Systems. (See Attachment A).

b. Identify and describe by type all existing "ventilation stoppings" that currently exist in Sterling Ventures' mine and show their location on a mine map for each of the three mining levels. Please include in your description the material and quantity of material used in each stopping, as well as the cost of each stopping.

RESPONSE: The ventilation stopping are shown on the mine maps. The materials and quantities vary by location.

c. If Sterling disposed of CCR in its mine and used it for ventilation control, to what extent would it be able to cease using the materials it currently uses for ventilation stoppings?

⁴ Gardner Testimony at 4 lines 12-14.

⁵ Attached to Sterling's Response to LG&E-KU DR No. 8 (July 17, 2015).

RESPONSE: Using CCR to fill the mine void would result in a reduction of the need for the ventilation stoppings by directing air flow and reducing the area ventilated.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 7

Responding Witness: Steve Gardner

7. Mr. Gardner states that disposing of CCR in Sterling's mine would "reduc[e] the volume of the mine area to ventilate and sav[e] energy required of mine fans to direct the air flow." Please describe all energy savings Sterling believes this would create, and provide all analyses and calculations Sterling has conducted to support the asserted energy savings.

RESPONSE: Reducing the area where air is forced through the mine reduces the volume of space to be ventilated and subsequently the energy required for ventilation. As more CCR is placed in the mine the energy requirement will go down.

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⁶ Gardner Testimony at 3 lines 4-6.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 8

Responding Witness: Steve Gardner

- 8. Sterling has stated that disposing of CCR in its mine will "facilitate mine ventilation."⁷
 - a. Please provide all plans, studies, and analyses Sterling has prepared or caused to be prepared concerning how disposing of millions of cubic yards of CCR will affect mine ventilation and air quality.

RESPONSE: Detailed analyses have not been performed by Sterling to quantify the reduction in ventilation needs due to placement of CCR material in the mine. However, placement of the CCR in the mine will reduce the open volume of the mine space and proportionately reduce the volume of ventilation required.

b. Please provide all plans, studies, and analyses Sterling has prepared or caused to be prepared concerning the control of: (1) increased particulate levels in the mine resulting from disposing CCR there; and (2) exhaust fumes generated by equipment used to dispose, move, and compact CCR in the mine.

RESPONSE: Underground limestone mining operations inherently deal with dust control and vehicle fume control. Sterling will adjust the ventilation requirements depending on the moisture content of the CCR materials as delivered from the LGE/KU treatment plant.

⁷ Gardner Testimony at 4 line 7.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 9

Responding Witness: Steve Gardner and John Walters

- 9. Mr. Gardner states, "Backstowing of the CCR will also provide additional long-term roof support within the mined out areas."
 - a. Provide reports addressing subsidence concerns at the Sterling mine, identify any requirements being placed upon Sterling that necessitate filling mine voids to address subsidence issues, and provide assessments of plans to fill the Sterling mine voids with non-CCR materials to address subsidence.

RESPONSE: There are no existing reports addressing subsidence or any known requirements being placed on Sterling that would necessitate using the CCR material to address subsidence issues. Mr. Gardner's statement was simply a statement of fact that backfilling has been used previously in mines to address long-term roof support.

- b. What procedures will Sterling use to compact the CCR such that it will provide long-term roof support?
 - **RESPONSE:** Compaction of the CCR will occur as heavy equipment places and/or runs over the material while moving it into final location. Use of the CCR material for roof support is not the primary purpose of the placement of the material in the mine; however, it potentially could be a long-term side benefit of the placement.
- c. Provide all analyses and calculations that support Mr. Gardner's assertion that backstowing of the CCR will also provide additional long-term roof support within the mined out areas.

RESPONSE: No engineering calculations have been performed regarding the capability of the CCR material to provide roof support. As previously stated, providing roof support is not the primary purpose for placement of the CCR material in the mine.

d. Provide a copy of Sterling's current long-term roof support plan for all three mining levels.

⁸ Gardner Testimony at 4 lines 8-9.

RESPONSE: See Attachment B.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 10

Responding Witness: Steve Gardner

- 10. Mr. Gardner states, "[T]he mine currently has a net available storage volume that exceeds 8 million cubic yards. At the current production level, the mine will have 9.5 million cubic yards of usable storage space in 2018 when the CCRs will start being shipped to the mine."
 - a. Provide copies of all analyses, diagrams, maps, and calculations reviewed or prepared by Mr. Gardner to support his opinions quoted above.

RESPONSE: Sterling Ventures began production of limestone at the quarry during FY 1999 and has recorded the following annual tons of limestone produced with an estimated cubic yards of underground mine space created:

Year	Production Tons	Est. Volume
		(CY)
1999	508,937	243,161
2000	922,627	440,816
2001	1,426,453	681,535
2002	1,201,988	574,290
2003	1,453,082	694,258
2004	1,541,249	736,383
2005	1,738,039	830,406
2006	1,545,447	738,388
2007	1,518,386	725,459
2008	1,706,031	815,113
2009	1,310,855	626,304
2010	1,112,560	531,562
2011	1,454,174	694,780
2012	978,380	467,453
2013	1,200,504	573,581
2014	1,147,288	548,155
TOTALS	20,766,000	9,921,644

⁹ Gardner Testimony at 10 lines 5-8.

b. Do Mr. Gardner's volume estimates account for the spaces that cannot be filled due to mine face up, haulage ways, slopes, shafts, access roads, mine entries committed to ventilation, mine entries for transport of crushed stone, Sterling's perimeter mining plan, and mine entries dedicated to maintenance, blasting supplies, and lubricant storage?

RESPONSE: Yes, the 90% factor is based on a conservative estimate that 10% of the available volume will be used for ventilation, transportation and other activities that will take place underground.

c. Provide, by mining level, an estimate of the remaining mineable reserves on property currently owned or controlled by Sterling Ventures of limestone that could be extracted for sale for the high quality lime market, and provide all maps, diagrams, studies, reports, and calculations that support the estimates.

RESPONSE: Sterling currently owns approximately 1000 acres of contiguous property at the mine site. Detailed reserve estimates have not been prepared by Sterling, however, based on the current mining rates/volumes the property owned by Sterling will provide approximately 200- 250 years of mine life.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 11

Responding Witness: Steve Gardner

11. Provide the factual basis and all documents supporting the assumption in Mr. Gardner's pre-filed direct testimony at page 11, lines 15 and 16 that a limestone sales and production increase of 1% per year is considered modest and is reasonably expected to occur.

RESPONSE: The <u>USGS 2013 Mineral Yearbook</u> dated April 2015 states on page 71.5:

With significantly stronger construction activity expected across the country in 2014 and recovery in the private sector and residential construction experiencing a level of growth not seen since late 2005, consumption of construction aggregates likely will increase. It is expected that the increased consumption in 2014 from that in 2013 will exceed the historical annual average of the past 50 years, which was a 2% to 4% increase per year. The estimated output of crushed stone in the 48 conterminous States shipped for consumption in the first 9 months of 2014 was 955 million tons, an increase of 8% compared with that of the same period of 2013 (Willett, 2014). Demand for crushed stone is expected to be higher in 2014 as reflected by an increased output of crushed stone in every quarter since the second quarter of 2013.

Based on the long-term average growth of crushed stone, a 1% increase over the next 37 years is conservative.

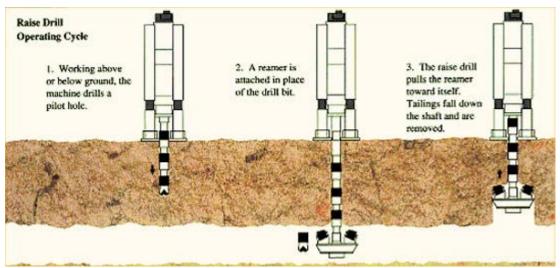
Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 12

Responding Witness: Steve Gardner

12. Provide the estimated cost, timing, and location of construction of the shaft referenced by Mr. Gardner on pages 16 and 17 of his pre-filed direct testimony, and provide the estimated dimensions of any such shaft, including the shaft's depth and diameter.

RESPONSE: Sterling will locate the shaft on their property such as to minimize CCR haul times while minimizing interference with the aggregate production and sales operations. Also as stated in previous testimony, the shaft will be located with consideration of the geological constraints. Details of the shaft construction will depend on the delivered volumes and consistency of the CCR materials, however, at this stage we theorize that the proposed shaft might have an external diameter of 14 to 20 ft, and could be grouted or concrete lined depending on conditions encountered. The shaft would be built using the technique called raise-boring, which is illustrated in the following schematic:



The shaft will be approximately 350 feet in depth. Typically, the average advance in construction of the greatest potential size of 20-ft shaft is 3 ft/day; therefore, it is estimated that it could take a maximum of approximately 120 days to construct the shaft. The cost of the shaft will be the responsibility of Sterling and is included in the proposed pricing.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 13

Responding Witness: Steve Gardner

13. Provide the estimated cost, timing, and location of construction of the new 10% slope entry referenced by Mr. Gardner on page 15 of his pre-filed direct testimony, and provide the estimated dimensions of any such slope, including its length, depth, and cross-sectioned area.

RESPONSE: Implementation of a proposed 10 percent ramp from the surface down to level one was presented as one possible method of delivering CCR material into the mine. The initial and future volume of CCR material delivery to the mine would dictate whether there is any need for construction of a new ramp. The estimated time to construct a new ramp into the mine is six (6) to eight (8) months. The cost of the shaft will be the responsibility of Sterling and is included in the proposed pricing.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 14

Responding Witness: Steve Gardner

14. Provide the basis for the opinion stated in Mr. Gardner's pre-filed direct testimony at page 3, lines 16-18 that CCR placed in Sterling's mine would have a "traditional beneficial use" in the future, and describe any such traditional beneficial use for such materials.

RESPONSE: The reference to "traditional beneficial use" is intended to reflect gypsum uses in wallboard, and ash cement and/or asphalt shingles.

a. Identify (on mine maps for each of the three mining levels) where CCR will be placed over the next 38 years along with the location of all shafts or slopes that are proposed.

<u>RESPONSE:</u> See mined out areas on mine maps previously provided, plus future mined areas within property boundaries.

b. Using the mine maps reference in Request for Information 14(a) above, identify the specific areas of Sterling's mine where CCR would reside so they could be easily recovered in the future after the cessation of stone mining operations.

RESPONSE: Same as above.

c. Please describe how Sterling would keep the various kinds of CCR segregated in the mine to prevent cross-contamination that could render the CCR unsuitable for future use, particularly if all three kinds of CCR (fly ash, bottom ash, and gypsum) will be dumped into the mine through the same shaft from the surface.

RESPONSE: The companies have not indicated any current plan to deliver segregated materials. However, if delivered segregated the materials would not be comingled in a shaft. Each would be dumped and placed separately.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 15

Responding Witness: John Walters

- 15. Mr. Gardner states, "Barges will be loaded with CCR at the Trimble County Power Plant and transported up the Ohio River to a permitted unloading site located in Warsaw, Kentucky." ¹⁰
 - a. Provide copies of all permits issued by regulatory authorities that are currently in place and effective for the proposed barge unloading site located in Warsaw, Kentucky.

RESPONSE: See Attachment C.

b. Please describe all of the changes to the Warsaw site, including equipment installations, that would need to occur for the site to be suitable for barge unloading as Sterling proposes, including the cost, construction time, and additional permits, if any, required for the needed site modifications.

RESPONSE: The Companies have already engineered and received cost estimates to build a facility on an unimproved steep river bank site, with no river infrastructure, near Sterling's mine, which was used to cost the "Sterling Alternative" in the 404 Supplement to Alternatives Analysis. Therefore, the Companies already have the requested information. The only additional permit needed for the Warsaw site versus the unimproved river would possibly be a building permit from the city of Warsaw.

c. Was the barge unloading operation analysis performed by Fenner-Dunlop Engineered Conveyor Solutions for the Warsaw site? If not, why does Sterling believe it is a valid assumption to use the Fenner-Dunlop analysis and cost estimates for the Warsaw site?¹¹

RESPONSE: No. However, the Warsaw site is improved with access, parking, a flat loading area, existing caisson, rip raped bank and concrete ramp. Sterling assumes that the cost to build a barge facility at the Warsaw sight would be substantially less than the Fenner- Dunlop projection. However, Sterling has used the Fenner-Dunlop cost projections in its PVRR analysis as a conservative estimate of cost for the Warsaw site.

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¹⁰ Gardner Testimony at 12 lines 1-3.

¹¹ See Gardner Testimony at 12 lines 5-13; Walters Testimony at 18 lines 14-17 and at 19 lines 3-4.

d. Who would be responsible for the cost of the necessary changes to the Warsaw barge unloading site?

RESPONSE: The Companies.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 16

Responding Witness: Steve Gardner

16. Provide copies of all spreadsheets, calculations, and analyses prepared by Mr. Gardner to support his opinions in Section V of his pre-filed direct testimony.

RESPONSE: See Attachment D

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 17

Responding Witness: John Walters

17. Refer to line 5 of the revenue requirements summaries provided in Exhibits S, U, V, and W to the Sterling Complaint as well as the note regarding line 5 in the document included in Exhibit S to the Sterling Complaint entitled "Sterling's PVRR Alternative Analysis Support Document." Please confirm that the gross price per ton in line 5 of the revenue requirements summaries varies with the volume of CCR disposed in the Sterling mine.

<u>RESPONSE:</u> Yes, the price varies with tonnage. The lower the tonnage, the higher the price.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 18

Responding Witness: John Walters

- 18. Refer to line 5 of the revenue requirements summaries provided in Exhibits S, U, V, and W to the Sterling Complaint. In Exhibits S and U, the gross price per ton for an annual disposal volume of 637,000 cubic yards is \$16.80 per ton. In Exhibit V, the gross price per ton for an annual disposal volume of 416,709 cubic yards is \$17.90 per ton. In Exhibit W, the gross price per ton for an annual disposal volume of 153,109 cubic yards is \$23.59 per ton.
 - a. Please confirm that these costs are correct.

RESPONSE: Confirmed.

b. Please confirm that these costs are expressed in 2018 dollars. If these costs are not expressed in 2018 dollars, please explain in what year's dollars these costs are expressed.

RESPONSE: Confirmed.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 19

Responding Witness: John Walters

- 19. The testimony of Mr. Walters mentions the Strategist computer program several times. 12
 - a. Does Mr. Walters have any experience with, or independent knowledge of, Strategist? If so, please describe that experience or knowledge.

RESPONSE: No. However, assuming the Companies' PVRR projections come from the Strategist, the program itself is programed in, or the programs' output uses, Excel workbooks. Mr. Walters has 35 years of experience using electronic spreadsheets, including Excel.

b. Please state Mr. Walters's understanding of the Strategist model and how the Companies use it.

RESPONSE. Mr. Walters has assumed that the Companies' PVRR projections come from the Strategist's Capital Project Model (CER). With respect to calculating the PVRR of ECR project alternatives using the CER module, the Companies would presumably input the same assumptions used in preparing the projected annual revenue requirements as set forth in Attachment D to Sterling's Supplemental Data request in order to determine the least PVRR cost alternative.

¹² See, e.g., Walters Testimony at 7.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 20

Responding Witness: Steve Gardner

20. Describe Mr. Gardner's personal experience with designing systems for handling of CCR.

RESPONSE: Mr. Gardner and ECSI have experience with the design of CCR disposal areas in relation to several mining permits in the state of Kentucky.

One project involved closure of mining permits using CCR. An old sand and gravel pit in Jefferson County was filled with approximately one-million cubic yards of CCR from an LG&E power plant as a beneficial use to reclaim the pit.

Another project involved the design of closure plans for a CCR landfill in Kentucky and negotiating agreements with regulatory agencies having jurisdiction. ECSI and Mr. Gardner also provided construction observation and engineering field services assisting the contractor in the closure.

Additionally, Mr. Gardner had a team of professionals collaborating with him in the preparation of his testimony. Mr. Edmundo J. Laporte, P.E., one of the team members, is an engineer with significant experience both nationally and internationally. Mr. Laporte, among other projects, was the engineer of record leading a team of professionals who worked for TVA's Office of the Inspector General during the Kingston ash spill. Mr. Laporte was intimately involved in the review of the root-cause analysis for that incident and also reviewed the design of existing and proposed CCR disposal facilities.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 21

Responding Witness: John Walters

21. Provide copies of the mining plans and projections that were reviewed by Mr. Gardner as referenced on page 2, line 8 of his pre-filed direct testimony.

RESPONSE: The "mining plans" referred to were the mine maps for each mining level already disclosed. The projections review was a verbal review of projected future mining volume based upon past production and current and anticipated market conditions.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 22

Responding Witness: John Walters

22. Provide copies of all feasibility, reserve, market analysis, and geology reports, contracts for the sale of limestone, ventilation plans, and roof support plans, that relate to Sterling Ventures' mine, that were provided to or reviewed by Mr. Gardner prior to the filing of his pre-filed direct testimony.

RESPONSE: None of the referenced documents were reviewed by Mr. Gardner. His pre-filed testimony was based upon a review of the mine maps, personal inspection of the mine, historical production and sales information and discussions with Sterling regarding anticipated future demand.

Response to Data Request of Kentucky Utilities Company and Louisville Gas and Electric Company Dated August 20, 2015

Question No. 23

Responding Witness: John Walters

23. Provide copies of any other reports or materials provided by Sterling Ventures to Mr. Gardner related to this case.

RESPONSE: See above Response. All reports referred to have been disclosed.